EQAO

Education
Quality and
Accountability
Office

Ontario Provincial Report on Achievement

Elementary Schools

2000–2001 Highlights

103-00301/

EQAO Key Messages

2000–2001 Provincial Report on Achievement

EQAO Key Messages

1. **The goal of assessing and reporting is to give parents, educators and students information that will help them improve student achievement.** Schools and school boards use province-wide assessment data along with the other data they collect to monitor the effectiveness of their improvement plans and to evaluate school programs.

2. **Improving student achievement is a gradual process.** Small increases or decreases from one year to the next are less important than general trends. Significant and sustainable improvement in student achievement requires focused and persistent attention over time.

3. **Student learning is affected by a wide range of factors in the classroom, school, home and community.** Assessment data can serve as a springboard for improvement only when people consider contextual data. Student, teacher and principal questionnaires provide some data on attitudes and practices. The EQUIP data that will be released in early December will help parents, educators and the community gain a more in-depth picture of factors that influence achievement.

4. **Assessment results should be used to improve learning and teaching, not to rank schools.** Rankings tell us nothing about why scores are high or low. They invite simplistic and misleading comparisons that ignore the particular circumstances that affect achievement in each school, and they distract people from addressing the critical issue of how to improve learning for all students.

Provincial Results

2000–2001 Provincial Report on Achievement

Percentages of Students at Achievement Level 3 and Above

Summary of Results — Grade 3

- English

	1997–1998	1998–1999	1999–2000	2000–2001
Reading	46%	45%	49%	49%
Writing	49%	52%	52%	52%
Mathematics	43%	56%	57%	61%

- French

	1997–1998	1998–1999	1999–2000	2000–2001
Reading	40%	42%	45%	41%
Writing	42%	52%	50%	51%
Mathematics	35%	39%	41%	40%

Percentages of Students at Achievement Level 3 and Above

Summary of Results — Grade 6

- English

	1998–1999	1999–2000	2000–2001
Reading	48%	50%	55%
Writing	48%	48%	53%
Mathematics	46%	51%	54%

- French

	1998–1999	1999–2000	2000–2001
Reading	59%	58%	54%
Writing	58%	58%	57%
Mathematics	55%	57%	60%

General Recommendations

2000–2001 Provincial Report on Achievement

General Recommendations

In the *1999–2000 Provincial Report on Achievement*, EQAO made general recommendations to students, parents, teachers, principals, school councils, school boards, faculties of education, the Ontario College of Teachers and the Ministry of Education. Since there has been little discernable improvement in the achievement data, except in mathematics, and little change in the questionnaire data, these recommendations stand and EQAO urges all education stakeholders to revisit these recommendations and ensure that they are being addressed.

The Ontario Curriculum, Grades 1–8, now in its fifth year of implementation, sets the language and mathematics expectations on which the Grade 3 and Grade 6 assessments are based. The province-wide assessment data and other contextual data that EQAO has released over the past four years show that large percentages of students in English- and French-language schools continue to achieve below the provincial standard. In addition, these data show minimal improvement in overall reading and writing results at the Grade 3 and Grade 6 levels as well as persistent discrepancies between girls' and boys' attitudes toward and achievement in reading, writing and mathematics in both Grade 3 and Grade 6.

General Recommendations — *continued*

Accordingly, EQAO makes the following recommendations:

1. That the **Ministry of Education** use the provincial Grade 3 and Grade 6 assessment data accumulated over the past four years to review the effectiveness of province-wide curriculum implementation, the range of instructional strategies teachers are using to deliver the curriculum, the training teachers are receiving to implement the curriculum and the use of available resources to support curriculum delivery at the classroom level.

2. That the **Ministry of Education, the Ontario College of Teachers, the teachers' federations and all faculties of education** ensure that they are providing teachers with ample opportunities, programs, resources and encouragement to develop and expand their assessment knowledge and skills.

3. That **school boards** carefully review their action plans in relation to the board data they have accumulated over the past four years from the province-wide Grade 3 and Grade 6 assessments and, where necessary, concentrate their efforts to implement measures to address those areas of student achievement in the language and mathematics curriculum that are not showing improvement.

General Recommendations — *continued*

4. That **school boards and schools**, in partnership with parents and school councils, incorporate the data collected and released as part of the Education Quality Indicators Program (EQUIP) into their school and board reports, action plans and local profiles in order to give parents and the public greater insight into the wide range of factors that contribute to achievement and to the functioning of the education system.

5. That **principals and teachers**, with support from their school boards and in consultation with parents and school councils, analyze and, where appropriate, act on the subject-specific recommendations in this report as well as on the comments from teacher markers about student achievement in reading, writing and mathematics.

6. That the **Ministry of Education and English- and French-language school boards** conduct and support research on best practices in teaching and assessing reading, writing and mathematics in the context of *The Ontario Curriculum, Grades 1–8*, and review and disseminate findings from local, national and international studies to principals, teachers, parents and communities.

Provincial Statistics and Context Information

2000–2001 Provincial Report on Achievement

Provincial Statistics and Context Information

Participation of English-Language Students

	Grade 3	Grade 6
Number of Students	138 456	137 968
Number of Classrooms	7 066	6 501
Number of Schools	3 293	3 058

Participation of French-Language Students

	Grade 3	Grade 6
Number of Students	7 024	6 446
Number of Classrooms	388	349
Number of Schools	265	262

Provincial Statistics and Context Information — *continued*

Participation of French Immersion Students

	Grade 3	Grade 6
ENGLISH – Reading, Writing and Mathematics	3 116	N/A
ENGLISH – Reading and Writing, FRENCH – Mathematics	2 889	N/A
FRENCH – Mathematics	2 702	N/A
Total Number of Students	8 707	8 307

Provincial Statistics and Context Information — *continued*

Percentage of Exempted Students — Grade 3

English

	1997–1998	1998–1999	1999–2000	2000–2001
Reading	6%	5%	8%	6%
Writing	4%	5%	7%	5%
Mathematics	4%	5%	6%	5%

French

	1997–1998	1998–1999	1999–2000	2000–2001
Reading	4%	5%	9%	5%
Writing	4%	5%	8%	5%
Mathematics	3%	4%	8%	4%

Provincial Statistics and Context Information — *continued*

Percentage of Exempted Students — Grade 6

English

	1998–1999	1999–2000	2000–2001
Reading	4%	6%	4%
Writing	4%	6%	4%
Mathematics	4%	6%	4%

French

	1998–1999	1999–2000	2000–2001
Reading	5%	6%	4%
Writing	5%	7%	4%
Mathematics	5%	7%	3%

Reading Statistics and Context Information

Overall English-Language Achievement in Reading at Levels 3 and 4 by Subgroup, 2000–2001

	Grade 3	Grade 6
Girls	54%	63%
Boys	43%	48%
Non-ESL	50%	56%
ESL	21%	22%
Not Receiving Special Education Support	55%	61%
Receiving Special Education Support	12%	22%

Reading Statistics and Context Information — *continued*

Overall French-Language Achievement in Reading at Levels 3 and 4 by Subgroup, 2000–2001

	Grade 3	Grade 6
Girls	48%	61%
Boys	34%	44%
Non ALF PDF	43%	53%
ALF PDF	17%	30%
Not Receiving Special Education Support	46%	57%
Receiving Special Education Support	10%	19%

Reading Statistics and Context Information — *continued*

Student Attitudes Toward Reading

English

	Grade 3	Grade 6
I am a good reader.	62%	61%
I like to read.	75%	64%
I like to talk about what I read.	33%	28%

French

	Grade 3	Grade 6
I am a good reader.	51%	49%
I like to read.	70%	56%
I like to talk about what I read.	33%	29%

Reading Statistics and Context Information — *continued*

Student Reading Habits

English

	Grade 3	Grade 6
I talk to people about what I read.	36%	31%
I do reading that is not part of my school work.	53%	56%

French

	Grade 3	Grade 6
I talk to people about what I read.	29%	29%
I do reading that is not part of my school work.	43%	57%

Reading Statistics and Context Information — *continued*

Student Reading Preferences

English

	Grade 3	Grade 6
I like to read chapter books or novels (stories).	73%	74%
I like to read information books.	44%	27%
I like to read poems.	47%	33%
I like to read magazines.	49%	65%

French

	Grade 3	Grade 6
I like to read chapter books or novels (stories).	61%	67%
I like to read information books.	54%	32%
I like to read poems.	45%	30%
I like to read magazines.	41%	51%

Writing Statistics and Context Information

Overall English-Language Achievement in Writing at Levels 3 and 4 by Subgroup, 2000–2001

	Grade 3	Grade 6
Girls	58%	63%
Boys	44%	44%
Non-ESL	53%	54%
ESL	26%	21%
Not Receiving Special Education Support	58%	60%
Receiving Special Education Support	12%	19%

Writing Statistics and Context Information — *continued*

Overall French-Language Achievement in Writing at Levels 3 and 4 by Subgroup, 2000–2001

	Grade 3	Grade 6
Girls	60%	65%
Boys	41%	45%
Non ALF/PDF	52%	55%
ALF/PDF	25%	35%
Not Receiving Special Education Support	57%	60%
Receiving Special Education Support	14%	21%

Writing Statistics and Context Information — *continued*

Students Attitudes Toward Writing

English

	Grade 3	Grade 6
I am a good writer.	54%	45%
I like to write.	63%	50%
I like to talk about what I write.	30%	23%

French

	Grade 3	Grade 6
I am a good writer.	46%	34%
I like to write.	58%	45%
I like to talk about what I write.	28%	22%

Writing Statistics and Context Information — *continued*

Student Writing Habits

English

	Grade 3	Grade 6
I do writing that is not part of my work for school.	48%	42%
I use a computer for writing.	30%	38%
I talk to someone about my topic.	29%	25%
I plan what I am going to write.	75%	60%
I correct my mistakes.	71%	67%
I share my good copy with others.	56%	55%

French

	Grade 3	Grade 6
I do writing that is not part of my work for school.	33%	29%
I use a computer for writing.	22%	35%
I talk to someone about my topic.	23%	21%
I plan what I am going to write.	75%	62%
I correct my mistakes.	70%	67%
I share my good copy with others.	39%	42%

Writing Statistics and Context Information — *continued*

Student Writing Preferences

English

	Grade 3	Grade 6
I like to write stories.	62%	55%
I like to write reports (research, book).	35%	22%
I like to write poems.	39%	29%
I like to write journals or diaries.	49%	32%
I like to write letters or cards.	63%	52%

French

	Grade 3	Grade 6
I like to write stories.	57%	48%
I like to write reports (research, book).	36%	28%
I like to write poems.	38%	30%
I like to write journals or diaries.	46%	33%
I like to write letters or cards.	67%	57%

Mathematics Statistics and Context Information

Overall English-Language Achievement in Mathematics at Levels 3 and 4 by Subgroup, 2000–2001

	Grade 3	Grade 6
Girls	62%	56%
Boys	60%	53%
Non-ESL	61%	55%
ESL	40%	37%
Not Receiving Special Education Support	67%	61%
Receiving Special Education Support	25%	23%

Mathematics Statistics and Context Information — *continued*

Overall French-Language Achievement in Mathematics at Levels 3 and 4 by Subgroup, 2000–2001

	Grade 3	Grade 6
Girls	40%	61%
Boys	39%	56%
Non ALF/PDF	41%	58%
ALF/PDF	17%	54%
Not Receiving Special Education Support	44%	63%
Receiving Special Education Support	12%	24%

Mathematics Statistics and Context Information — *continued*

Student Attitudes Toward Mathematics

English

	Grade 3	Grade 6
I am good at mathematics.	53%	49%
I understand the mathematics that I do at school.	47%	51%
I like mathematics.	60%	49%
I think mathematics is easy.	36%	28%

French

	Grade 3	Grade 6
I am good at mathematics.	58%	48%
I understand the mathematics that I do at school.	50%	50%
I like mathematics.	68%	52%
I think mathematics is easy.	40%	29%

Mathematics Statistics and Context Information — *continued*

Student Mathematics Preferences

English

	Grade 3	Grade 6
I like measuring things.	51%	39%
I like drawing graphs, charts, etc.	46%	45%
I like working with shapes.	57%	46%
I like estimating and predicting results.	53%	36%
I like solving mathematical problems.	48%	38%

French

	Grade 3	Grade 6
I like measuring things.	55%	46%
I like drawing graphs, charts, etc.	51%	45%
I like working with shapes.	54%	41%
I like estimating and predicting results.	53%	37%
I like solving mathematical problems.	49%	38%

Mathematics Statistics and Context Information — *continued*

Application of Mathematics

English

	Grade 3	Grade 6
I do mathematics that is not part of my work for school.	44%	36%
I use a calculator.	19%	10%
I use a computer.	26%	7%
I use mathematics to solve problems outside of school.	37%	43%

French

	Grade 3	Grade 6
I do mathematics that is not part of my work for school.	40%	33%
I use a calculator.	11%	11%
I use a computer.	21%	6%
I use mathematics to solve problems outside of school.	35%	40%

Marking Participation and Survey Data

English	French	
2 960	**188**	number of teachers and principals who were involved in marking the 2000–2001 Grade 3 and Grade 6 assessments
62%	**53%**	of markers were marking for the first time
25%	**26%**	of markers were marking for the second time
9%	**7%**	of markers were marking for the third time
3%	**12%**	of markers had marked more than three times
99%	**98%**	of markers rated the training as either very or generally effective
80%	**98%**	of markers said the experience was "very useful" as professional development
93%	**77%**	of markers said that their experience marking EQAO assessments would have a strong impact on their classroom practices

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Ontario Provincial Report on Achievement

2000–2001

English-Language Elementary Schools

Ontario Provincial Report on Achievement

2000–2001

Elementary Schools

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Note: In this report, the word "parent" is used to refer to a parent, legal guardian or any other person who acts as a caregiver.

The Board of Directors

The Board of Directors, from left to right, Bette Stephenson, Bob Bonisteel, Martin Cugelman, Dominic Giroux, Maureen Kempston Darkes, Jerry Ponikvar, Doretta Wilson.

In Memoriam

Dr. Robert (Bob) Surtees, the Chair of EQAO's Board of Directors, passed away suddenly on Saturday, August 25, 2001. Dr. Surtees was appointed to the Board of Directors in February 1997 and had served as Chair for the last two years.

Dr. Surtees was Professor of History at Nipissing University in North Bay and had been a member of the Faculty of Arts and Science since 1967.

On behalf of the Board of Directors, Vice Chair Dr. Bette Stephenson paid tribute to Dr. Surtees, stating, "Robert was a strong supporter of public education in the province and contributed immensely to the agency's work. An optimist by nature, he was always generous and outgoing. His leadership and sense of humour will be missed dearly by his colleagues on the Board and the EQAO staff."

EQAO's Board of Directors dedicates this report to the memory of Dr. Robert Surtees.

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November 2, 2001

Honourable Janet Ecker
Minister of Education
900 Bay Street
Mowat Block, 22nd Floor
Toronto, Ontario
M7A 1L2

Dear Minister:

The Board of Directors of the Education Quality and Accountability Office (EQAO) is pleased to present the fifth annual *Ontario Provincial Report on Achievement.* This report, like its predecessors, provides an overview of student achievement across the province. The Individual Student Reports and the school and board reports contain more detailed information for parents, students, educators and Ontario's communities.

In 2000–2001, EQAO conducted four province-wide assessments: the annual Grade 3 and Grade 6 Assessments of Reading, Writing and Mathematics and, at the secondary level, the new Grade 9 Assessment of Mathematics and a trial administration of the Ontario Secondary School Literacy Test (OSSLT). This year, the Provincial Report consists of two sections, to be released separately: an elementary section, which presents data from the Grade 3 and Grade 6 assessments, and a secondary section, which for the first time presents data from the annual Grade 9 assessment. (Data from the October 2000 trial administration of the OSSLT were released earlier.) The secondary section also contains Ontario student achievement data from the Third International Mathematics and Science Study Repeat Project (TIMSS-R), which involved Grade 8 students.

Now that the two annual secondary assessments are in place, we will be able to provide good, reliable information on how well students are meeting the provincial curriculum expectations in key subject areas from as early as Grade 3 and right up to secondary school. As a result, educators, parents and Ontario's communities will be able to track improvements in student achievement over time and across the elementary and secondary grades.

We trust that you, parents, students, educators, policy makers and Ontarians, will find the information in this report insightful, challenging and useful for the purpose of school and system improvement.

Bette Stephenson, Vice Chair

Bob Bonisteel

Martin Cugelman

Dominic Giroux

Maureen Kempston Darkes

Jerry Ponikvar

Doretta Wilson

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Vice Chair's Message

Bette Stephenson

The annual *Ontario Provincial Report on Achievement* provides a clear and informative picture of student achievement in reading, writing and mathematics.

To accommodate data from the new Grade 9 Assessment of Mathematics, we are releasing the Provincial Report in two sections, elementary and secondary, this year. The two sections contain a great deal of data about achievement and the context for learning in the province's elementary and secondary schools. The Provincial Report will give parents, policy makers and educators much to think about and much to act on in the short-, medium- and long-terms.

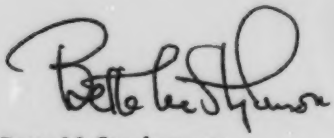
The elementary section of this year's report shows positive and encouraging trends in mathematics, especially in Grade 3. However, it also shows that reading and writing have not shown the same degree of improvement. This remains a subject of great concern for our Board of Directors.

EQAO is in its sixth year of province-wide assessment. There is now a strong culture of assessment in Ontario and a widespread recognition that accountability and improvement go hand in hand.

Schools have an obligation to report to parents and their communities on how well students are meeting the expectations in the provincial curriculum. At the same time, parents, policy makers and all communities, including the media, have a reciprocal obligation to use this information responsibly to make the school system better for all students. There is nothing to be gained from ranking schools or making simplistic comparisons that ignore the many factors that contribute to student achievement in each school.

In this changing world, parents and all Ontarians have high expectations for our schools. At the same time, in striving to meet these expectations, schools have the right to expect commitment and support from parents and our communities. Our students need teachers who are highly trained and motivated, families that are supportive and involved, and communities that are interested and prepared to invest in the publicly-funded education system over the long-term.

The recommendations we have made in the elementary section of this report highlight the steps that teachers, principals, parents, schools, school boards and everyone in the education community must take to improve student achievement and to give all children and young people the opportunities, direction and support they need and deserve.



Bette M. Stephenson

Education Quality and Accountability Office (EQAO)

Role

EQAO promotes greater accountability and better quality in Ontario's publicly funded school system. An independent, arm's-length agency of the provincial government, EQAO provides parents, teachers and the public with accurate and reliable information about student achievement. EQAO also makes recommendations for improvement that educators, parents, policy-makers and others in the education community can use to improve learning and teaching.

Responsibilities

- To conduct province-wide tests of elementary and secondary school students
- To coordinate Ontario's participation in national and international assessments
- To administer a provincial Education Quality Indicators Program (EQUIP) to strengthen school board accountability
- To report to parents and the public about student achievement and education quality in Ontario
- To make recommendations for school and system improvement

Values

- EQAO values the well-being of learners above all other interests.
- EQAO values only that information which has the potential to bring about constructive change and improvement.
- EQAO values the dedication and expertise of Ontario's educators and works to involve them in all of its activities.
- EQAO values the delivery of its programs and services with equivalent quality in both English and French.

Approach

- Assess students' achievement in different subject areas and at key stages in their schooling
- Assess students' achievement against the expectations in the provincial curriculum
- Analyze data on student achievement and the learning environment inside and outside the school to determine where progress is being made and where gaps need to be closed
- Prepare materials and provide opportunities that teachers can use to enhance their skills and expertise in assessment
- Report to parents, students, educators and the public about student achievement and education quality
- Make recommendations for improvement
- Monitor improvements in student achievement over time to identify areas of strength and areas requiring further attention
- Support a culture of assessment through ongoing testing, research and administration of a quality indicators program

Education Quality Indicators Program (EQUIP)

Background

EQAO established the Education Quality Indicators Program (EQUIP) in 1998.

One of EQUIP's main purposes is to give parents, educators and the public an in-depth picture of the factors inside and outside the school that contribute to achievement. With this additional contextual information, educators and parents will be able to take their interpretations and analyses of EQAO assessment results a step further and draw more precise conclusions about the changes that need to be made in order to enhance learning and teaching.

EQUIP data for schools, school boards and the province as a whole are collected, analyzed and reported at the provincial, board and school levels.

Method

EQUIP consists of a set of indicators that provide information under seven themes.

EQUIP provides data on indicators at both the elementary level and the secondary level. EQAO gathers the data for EQUIP from three sources:

a) Questionnaires distributed as part of the annual province-wide EQAO assessments;

b) Other questionnaires designed to address specific indicators;

c) the Ministry of Education, Statistics Canada and other organizations.

A complete list of themes and indicators follows.

Further information about EQUIP, including background on the themes and indicators, is available on the EQAO Web site at www.eqao.com.

Status

In early December, each school and school board will release data on the indicators listed in the chart on the following page. These data were collected through the first full application of EQUIP in 2000–2001.

Schools and school boards will be able to incorporate EQUIP data into school and school board profiles and to use the indicator data over time to enhance their improvement planning.

School and school board data, together with data for the province as a whole, will also be available on the EQAO Web site starting in January.

EQUIP Indicators

Theme	*Elementary School Indicator(s)*	*Secondary School Indicator(s)*
A. Community, Student and Family Demographics	1. Student enrolment (total enrolment and enrolment by grade) 2. Socio-economic status (family income levels) 3. Parental educational attainment 4. Student language background (language spoken at home, ESL enrolment, length of time lived in Canada) 5. Categories of students with special needs (behavioral, communicative, intellectual, physical or requiring multiple service supports) 6. Student mobility (number of schools a student has attended since Grade 1)	1. Student enrolment (total enrolment and enrolment by grade) 2. Socio-economic status (family income levels) 3. Parental educational attainment 4. Student language background (language spoken at home, ESL enrolment, length of time lived in Canada) 5. Categories of students with special needs (behavioral, communicative, intellectual, physical or requiring multiple service supports)
B. Preparedness to Learn and Early Learning Support	7. Student attendance in nursery school or kindergarten	
C. School Leadership	8. School leadership, planning and decision-making	6. School leadership, planning and decision-making
D. School Climate	9. School safety 10. Class size and organization 11. Support personnel 12. Types of special education programs available	7. School safety 8. Class size and organization 9. Support personnel 10. Types of special education programs available
E. Community-School Relationships	13. Community-school relationships	11. Community-school relationships
F. Teaching and Learning Environment	14. Time distribution for reading, writing and mathematics activities 15. Accessibility of instructional materials 16. Availability of assessment materials 17. Availability of computers 18. Teacher professional development, planning and collaboration 19. Parental involvement 20. Teacher qualifications and experience	12. Teacher qualifications and experience
G. Student achievement	21. Student achievement on EQAO's province-wide assessments	

EQAO Assessment Activities

Provincial

Assessment	*Population*	*Subject(s)*	*Details*
Grade 3 Assessment of Reading, Writing and Mathematics	All Grade 3 students	Reading, Writing and Mathematics	• Annual assessment held in May • Individual results released in September; school, school board and provincial results released in October/November
Grade 6 Assessment of Reading, Writing and Mathematics	All Grade 6 students	Reading, Writing and Mathematics	• Annual assessment held in May • Individual results released in September; school, school board and provincial results released in October/November
Grade 9 Assessment of Mathematics	All Grade 9 students enrolled in applied or academic mathematics programs	Mathematics	• Annual assessment held in January for first-semester students and in June for full-year and second-semester students • Individual results released in early fall; school, school board and provincial results released in October/November
Ontario Secondary School Literacy Test	All Grade 10 students working towards a high school diploma	Reading and Writing	• Annual assessment held in October • Individual results released in February; school, school board and provincial results released in October/November • Students can retake the test during second, annual April/May administration or during the following October administration

National

Assessment	*Population*	*Subject(s)*	*Details*
School Achievement Indicators Program (SAIP)	Random sample of 13- and 16-year-old students	Mathematics	• Assessment conducted in April/May 2001 • Results due 2002
School Achievement Indicators Program (SAIP)	Random sample of 13- and 16-year-old students	Writing	• Assessment conducted in April/May 2002 • Results due 2003

International

Assessment	*Population*	*Subject(s)*	*Details*
Second Information Technology in Education Study (SITES) Module 2	Four Ontario Schools (3 anglophone and 1 francophone) selected as part of a Canadian Study	Case studies of school sites displaying exemplary, innovative teaching practices using computer technology	• Case studies conducted 2000–2001 • Results due 2002
Organization for Economic Co-operation and Development's (OECD) Program for International Student Assessment (PISA)	Random sample of 15-year-old students	Reading (major subject) Mathematics and science (minor subjects)	• Assessment conducted in April/May 2000 • Results due December 2001
Progress in International Reading Literacy Study (PIRLS)	Random sample of 9-year-old students	Reading literacy	• Assessment conducted in spring 2001 • Results due 2002

Quality Assurance

Quality assurance helps to ensure that EQAO's assessments produce valid and reliable data. Quality assurance mechanisms are embedded in each stage of the assessment cycle, including design and development, piloting, field testing and revision, administration, marking and reporting. Quality assurance information collected during and at the end of each assessment cycle is used to review and improve assessment policies and procedures.

Stage One: Design and Development

Quality Assurance Procedures

- A technical committee of assessment experts guides design and development to ensure consistency with EQAO values and sound assessment practices.
- EQAO personnel direct, monitor and support the work of development teams.
- A validation team of educators examines test materials for bias and appropriateness.
- English and French development teams work collaboratively to ensure the comparability of assessments.

Stage Two: Piloting, Field Testing and Revisions

Quality Assurance Procedures

- EQAO quality assurance monitors visit field-test sites and record observations.
- Using a questionnaire and making anecdotal comments, field-test teachers record their reactions to administration directions and assessment materials and their observations on student reactions.
- Using questionnaires, EQAO monitors marker training.
- The technical committee approves the final form of the assessment.
- The validation team validates the final form of the assessment.

The 2000–2001 Grade 3 assessment was field tested in 34 classrooms across the province, involving almost 1000 Grade 4 students. The 2000–2001 Grade 6 assessment was field tested in 35 classrooms across the province, involving almost 1100 Grade 7 students. The teachers who administered the field tests were asked to record the time it took students to complete the activities. This information was then used by EQAO staff to revise specified times in the *Teacher's Daily Plans*, which teachers use to administer the assessments.

Stage Three: Administration

Quality Assurance Procedures

Quality assurance procedures are in place to ensure that all assessment materials meet EQAO specifications.

EQAO monitors the training of teachers to administer the assessment.

EQAO makes on-site visits to 10% of the participating classrooms in the province to collect data on how accurately and consistently teachers and principals are following the procedures outlined in the *Administration Guide for Teachers and Principals.*

EQAO also makes follow-up visits to schools where irregularities were identified during the administration of the previous year's assessment.

The 2000–2001 Administration

In 2000–2001, quality assurance monitors visited 241 schools across the province, including 122 Grade 3 classes and 119 Grade 6 classes. With the exception of 12 schools that were identified during the 1999–2000 assessment as requiring a quality assurance visit this year, the schools visited were selected at random.

In each school, monitors recorded information acquired through an interview with the principal, a discussion with the teacher and classroom observation of the administration. All monitors had experience as teachers, principals, consultants, supervisory officers or Ministry of Education officers.

Some highlights

- In 98% of the classes visited, students were reported to be generally or completely positive about the assessment.
- In 97% of schools, classrooms were arranged in such a manner that students could work individually or in groups when necessary.
- In 98% of classes visited, the assessment proceeded in an orderly and systematic manner.
- In 94% of classrooms the appropriate materials were on display.
- In 92% of the classes observed, prescribed timelines were followed.
- In 88% of the classes observed, teachers followed the required procedures in the *Teacher's Daily Plans*.
- 87% of principals reported that they had received training to prepare them for the administration of the assessments.
- 53% of Grade 3 teachers and 57% of Grade 6 teachers reported that they had received training this year. Nearly all of those who had not received training this year reported that they had been trained one or more times during earlier years. A few teachers reported that they had never been trained.

Stage Four: Marking

Quality Assurance Procedures

Various reliability checks are embedded in the marking process. The checks include

- **questionnaires to monitor level of understanding administered to markers during training;**
- **orientation booklets completed each morning before marking began;**
- **paired markings;**
- **reliability booklets completed each afternoon; and**
- **calibration booklets (a random selection of students' booklets re-marked each day).**

The Marking

There were 2960 teachers and principals involved in marking the 2000–2001 Grade 3 and Grade 6 assessments.

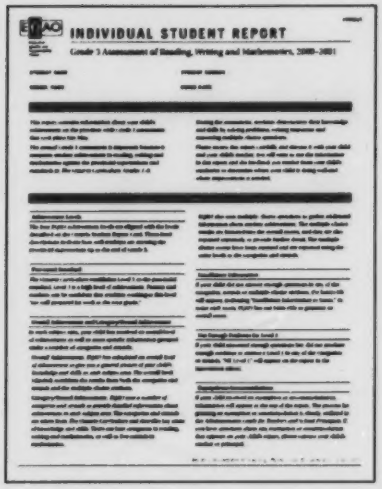
Some highlights

- 62% of markers were marking for the first time, 25% were marking for the second time, 9% were marking for the third time and 3% had marked EQAO assessments more than 3 times.
- 73% of markers rated the training as "very effective" and a further 16% rated it as "generally effective."
- More than 80% of markers said the experience was "very useful" as professional development, and a further 17% said it was "generally useful."
- 53% of markers said that their experience marking EQAO assessments would have a very strong impact on their classroom practices, and a further 40% said it would have a strong impact.

Number of Individual Student Reports (ISRs) generated for the 2000–2001 assessments: 276,424

Number of School Reports generated: 3293

Number of School Board Reports generated: 72


INDIVIDUAL STUDENT REPORT

Stage Five: Reporting

There are four kinds of reports for each assessment: individual, school, school board and provincial.

EQAO provides Individual Student Reports (ISRs) to parents and teachers. The ISR provides overall and detailed information about each student's achievement in reading, writing and mathematics, across 17 categories and strands.

Schools and school boards prepare their own reports for the Grade 3 and Grade 6 assessments. These local reports contain achievement data as well as contextual data from the EQAO questionnaires and other sources.

Finally, the *Provincial Report on Achievement* is published annually and contains results from the assessments, as well as summaries of the questionnaire data and recommendations for school and system improvement.

Quality Assurance Procedures

EQAO has data management procedures in place to ensure data are recorded and correctly attributed to individual students, schools and school boards. EQAO has procedures in place for conducting a review of individual student results when requested.

Monitoring Assessment Compliance

EQAO staff and data analysts are trained to detect irregularities in the administration and/or marking of the assessment that may require further investigation and action. These problems may have been identified during the administration of the assessment, during marking or during the subsequent data analysis process. EQAO also follows up on any irregularities that are reported to the office.

EQAO, along with school and school board officials, investigates any reported irregularities. Depending on the severity of the situation, EQAO may have to deem the results of a student, class or school to be invalid.

Review and Improvement of Assessment Policies and Procedures

EQAO uses quality assurance data and feedback gathered at each stage of the assessment cycle to review and modify the assessment instruments, materials and processes. In addition, after each administration, EQAO reviews the entire assessment and makes changes to the following year's assessments.

Some Modifications and Revisions Affecting this Year's Assessment:

- As a result of student and teacher feedback from the field tests, EQAO modified the assessments to ensure that the time allocations were more appropriate.
- In response to suggestions made by teachers and principals following the 1999–2000 assessments, EQAO made changes to the exemptions and accommodations policy to provide clearer instructions for decision-making.
- In response to questions from principals and school boards about dealing with situations that might disrupt the administration of an EQAO assessment, EQAO developed the *Policy on Cancelling or Discontinuing the Administration of an EQAO Assessment.*
- As a result of feedback from teachers and markers, EQAO altered the icons in the assessment booklets to help students understand the requirements of the different types of questions and tasks.

Selected Samples of Student Work

The following samples of assessment materials and student responses provide a brief look at the type of reading and writing students were expected to do and the types of reading and mathematics questions students were expected to answer. The student responses were selected from the Grade 3 and Grade 6 Level 3 anchor booklets, which were used to train teachers to mark the assessments. Each response is followed by a brief rationale explaining the characteristics that make it a Level 3 response.

Complete sets of anchor papers are available on EQAO's Web site at www.eqao.com/eqao/home_page/elementary/3e.html under the title "Sample Units."

Sample Reading Passage, Questions and Level 3 Student Responses

Students were required to read a number of different types of passages and answer a variety of questions.

Note: Markers were assessing reading skills, not writing skills, in this section of the assessment.

Grade 3 Reading

Level 3 Reading Assessment Scale for Grade 3:

Reasoning
Demonstrates general understanding by using ideas of some complexity, beginning to make inferences and responding with information that is consistently related to the text.

Communication
Demonstrates the ability to use ideas in different contexts by clearly and precisely supporting them with personal knowledge/experience.

Organization of Ideas
Demonstrates a general understanding of different forms of text by identifying the use of characteristics and organizational elements of some complexity.

Application of Language Conventions
Demonstrates a general understanding of most of the required conventions by correctly identifying and explaining their use.

Excerpt from the assessment

Round and Round Again

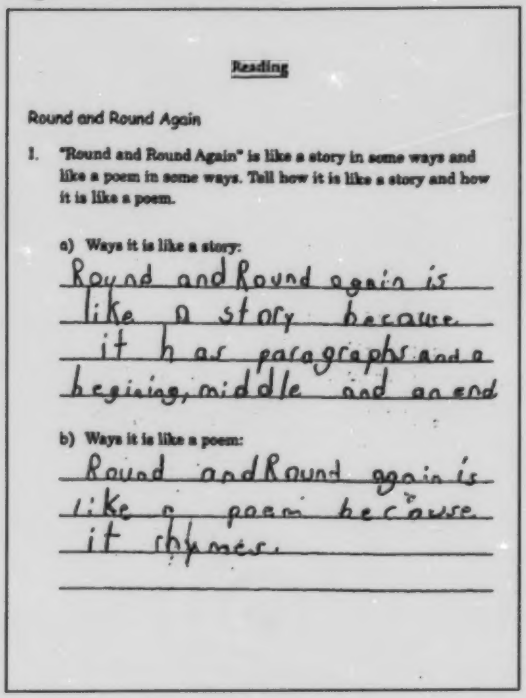
Let me tell you a story — it's funny but true —
how Mama changed old things into new.
She saved newspapers, plastic, tin.
Anything used, she used again.
She sang, "Round and round and round again,
over yonder and back again!"

Mama found a use for any old thing,
like a basketball net made of ribbons and string.
The rim of an old bike tire was the hoop
tacked on the back of our chicken coop.

Mama took old papers and tore them up.
She mixed some paste in a measuring cup.
She made us puppets, masks, and hats.
We put on a show for the dogs and cats!
They howled, "Round and round and round again,
over yonder and back again!"

Mama hated to see things thrown away.
This gave her a wild idea one day.
She hopped in her pickup. She drove up and down.
She filled it with goodies she found around town.
Over and over, she went back for more.
The things in our yard soon crept to the door.
When she returned with another load of stuff
we cried, "Oh, Mama! Enough is enough!"
But she kept singing, "Round and round and round again,
over yonder and back again!"

Organization of Ideas



Reading

Round and Round Again

1. "Round and Round Again" is like a story in some ways and like a poem in some ways. Tell how it is like a story and how it is like a poem.

a) Ways it is like a story:

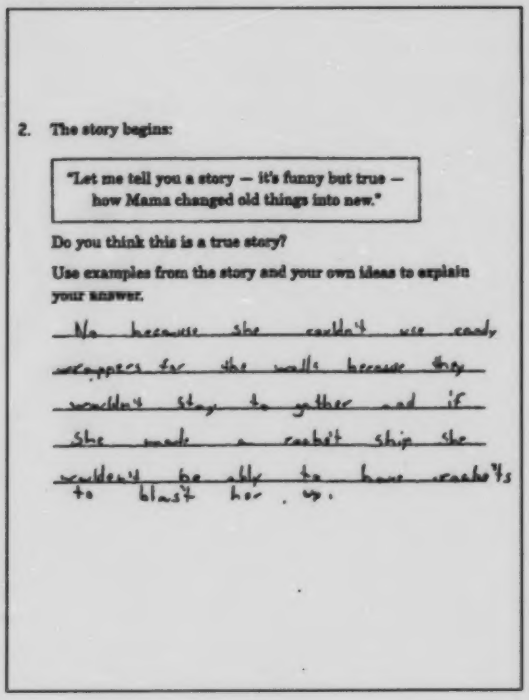
Round and Round again is like a story because it has paragraphs and a beginig, middle and an end

b) Ways it is like a poem:

Round and Round again is like a poem because it rhymes.

Rationale
describes stories and poems as text forms (e.g., identifies beginning, middle, end and paragraphing as characteristics of a story; states that the poem rhymes.)

Communication



2. The story begins:

"Let me tell you a story — it's funny but true — how Mama changed old things into new."

Do you think this is a true story?

Use examples from the story and your own ideas to explain your answer.

No because she couldn't use candy wrappers for the walls because they wouldn't stay together and if she made a rocket ship she wouldn't be able to have rocket's to blast her up.

Rationale
defends story as true or not true (e.g., defends story as not true, itemizes defenses clearly and precisely, supporting them with personal knowledge, "she couldn't use candy wrappers for the walls because they wouldn't stay together...")

Reasoning

4. How do the children feel at the beginning of "Round and Round Again" when they cry "Oh, Mama! Enough is enough!"?

They feel frustrated because since bringing garbage home.

Explain how the children feel at the end of "Round and Round Again."
Use examples from the story.

The children felt glad so when they get back to see what a good time everyone had.

Rationale
identifies changes in feelings and begins to make inferences (e.g., "They feel frustrated... felt glad when they get back to see what a good time everyone had.")

Application of Language Conventions

5. Read these words from "Round and Round Again."

Circle the word that has a different vowel sound from the word in the first box.

The first one has been done for you.

us	fuss	(true)	bunch
coop	door	soon	(zoomed)
bread	crept	(great)	fence
old	drove	load	(one)
blazed	changed	(plaid)	played
looked	took	(boomed)	good
round	(enough)	house	bounce

Rationale
identifies different vowel sounds (e.g., identifies correctly most of the vowel sounds)

Grade 6 Reading

Level 3 Reading Assessment Scale for Grade 6:

Reasoning
Demonstrates general understanding by using ideas of some complexity and responding with some complex information that is consistently related to the text.

Communication
Demonstrates the ability to interpret by clearly and precisely connecting appropriate textual references to personal knowledge/experience.

Organization of Ideas
Demonstrates a general understanding of different forms of text by identifying the use of characteristics and organizational elements of some complexity.

Application of Language Conventions
Demonstrates a general understanding of most of the required conventions by correctly identifying and explaining their use.

Excerpt from the assessment

Earth and Water and Sky

IT WAS A LONG HIKE through the woods to the Thinking Pond, but David Brenner didn't mind. He'd been going there for three years, ever since he was ten and had found the lonely, stream-fed pool while exploring one summer afternoon. He liked to spend time there more than he liked doing almost anything else.

David couldn't understand why he seemed to be the only one who saw how amazing it was for a squirrel to run down a tree headfirst, or how unique each day's sky full of clouds was. His mom said he was sensitive and thoughtful.

About four hundred metres from the pond, David caught sight of the huge, gnarled oak tree he'd nicknamed the Old Giant for its rough, craggy bark and tall, thick trunk. David had often considered climbing it. He thought maybe he could wrap a rope around the trunk and his waist, and then creep his way up to the high branches like a lumberjack. But, somehow, it always seemed too dangerous to try. Still, he wondered what it would be like to look out over the top of the forest.

When he reached the giant tree, David sat down and shrugged off his backpack. He unscrewed the lid from his thermos and thirstily drank the cool, tart juice inside. Then he leaned back against the wide trunk to rest for a few minutes.

Today David planned to sketch some interesting fallen trees near the Thinking Pond. He liked to take his drawings back and have his dad scan them onto a disk at work. David would then colour and enhance them on his computer. He had made some really cool prints that way.

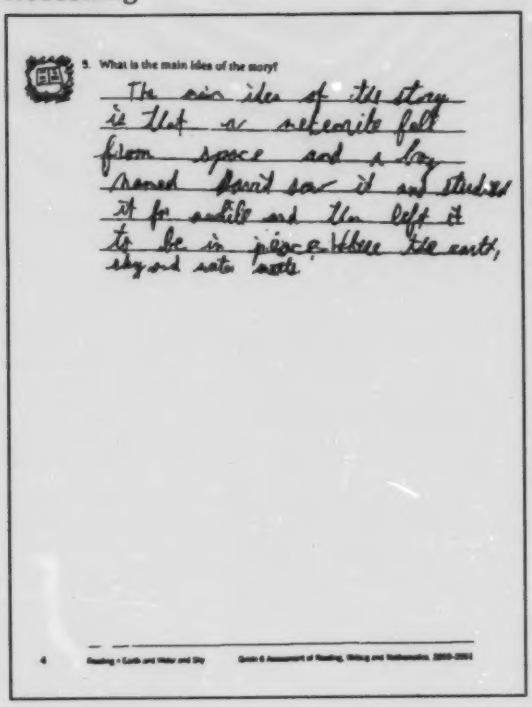
David stood up and continued toward the Thinking Pond. Suddenly, he heard a sharp, whining sound like the engine of a highflying jet airplane. It was followed by a *crack!* like a whip being snapped, only a thousand times louder. Then a ball of fire roared overhead, followed by a searing gust of wind.

The shock wave knocked David to the ground, his ears ringing. A second later, he heard an explosive, hissing crash up ahead. A rush of air and hot steam billowed through the trees, and he covered his head as it washed over him.

After several minutes, David looked up. The warm, wet mist had dispersed, leaving the woods damp and sparkling with little droplets of water.

What in the world just happened? he wondered as he got to his feet. Cautiously but curiously, he headed in the direction of the Thinking Pond. By now David could usually see the shine of sunlight on the gently rippling water, but today something was different. Covering the last hundred metres quickly, David stopped at the edge of the meadow where the pond lay.

Reasoning



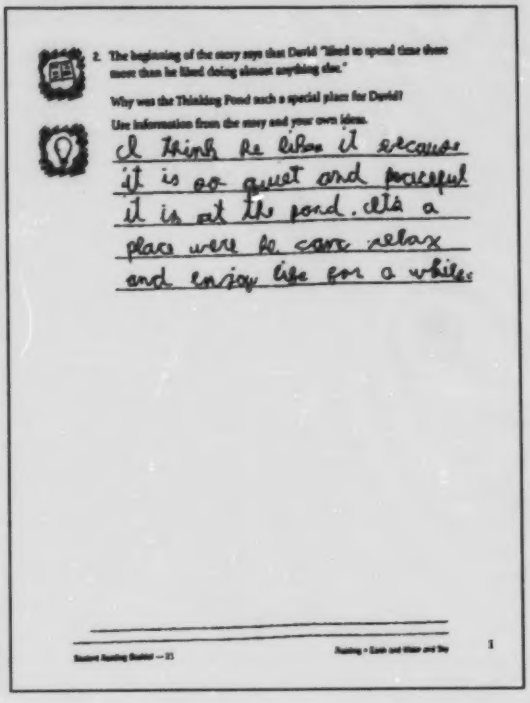
5. What is the main idea of the story?

The main idea of the story is that a meteorite fell from space and a boy named David saw it and studied it for awhile and then left it to be in peace where the earth, sky and water meets.

4 Reading • Earth and Water and Sky Grade 6 Assessment of Reading, Writing and Mathematics, 2000–2001

Rationale
interprets main idea (e.g., "...then left it to be in peace. Where the earth, sky, and water meets.")

Communication



2. The beginning of the story says that David "liked to spend time there more than he liked doing almost anything else."

Why was the Thinking Pond such a special place for David?

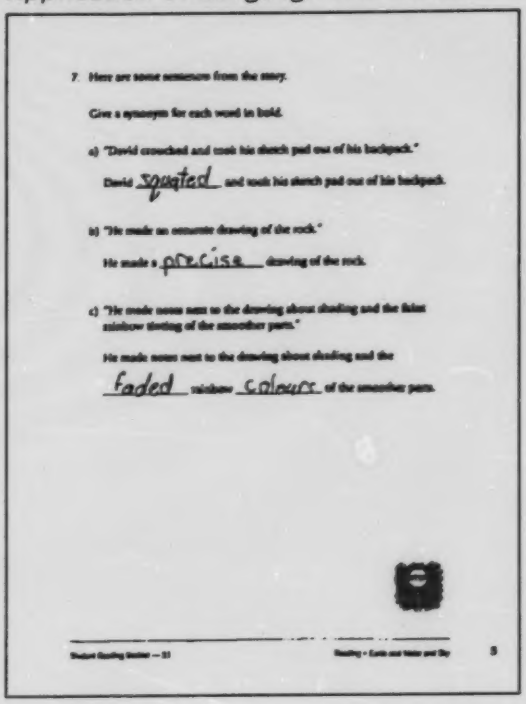
Use information from the story and your own ideas.

I think he likes it because it is so quiet and peaceful it is at the pond. It's a place were he can relax and enjoy life for a while.

Student Reading Booklet — 15 Reading • Earth and Water and Sky 1

Rationale
explains why the Thinking Pond is a special place by connecting text and personal experience (e.g., "...quiet and peaceful ... he can relax ... for a while.")

Application of Language Conventions



7. Here are some sentences from the story.

Give a synonym for each word in bold.

a) "David crouched and took his sketch pad out of his backpack."

David squated and took his sketch pad out of his backpack.

b) "He made an accurate drawing of the rock."

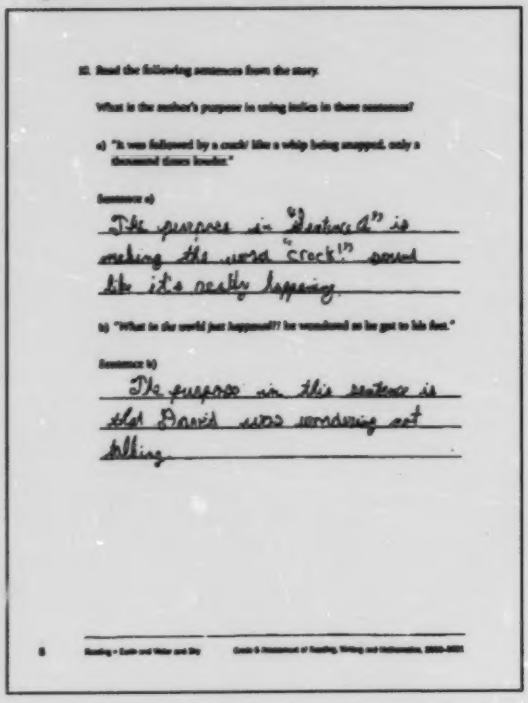
He made a precise drawing of the rock.

c) "He made some notes on the drawing about shading and the faint rainbow tinting of the smoother parts."

He made notes next to the drawing about shading and the faded rainbow colours of the smoother parts.

Rationale
demonstrates general understanding of appropriate synonyms in light of the story context (e.g., "squated, precise, faded, colours")

Organization of Ideas



12. Read the following sentences from the story.

What is the author's purpose in using italics in these sentences?

a) "It was followed by a crack! like a whip being snapped, only a thousand times louder."

Sentence a)

The purpose in "Crack!" is making the word "crack!" sound like it's really happening.

b) "What in the world just happened!? he wondered as he got to his feet."

Sentence b)

The purpose in this sentence is that David was wondering out talking.

Rationale
describes use of italics with general understanding (e.g., "'crack!' sound like it's really happening.")

Sample Writing Prompts and Level 3 Student Responses

Note: Although both the Grade 3 and Grade 6 writing samples contain a few errors in spelling and grammar, both demonstrate "general accuracy" in their application of language conventions.

Grade 3 Writing

Level 3 Writing Assessment Scale for Grade 3:

Reasoning
Demonstrates reasoning by using ideas of some complexity that are clearly related to the purpose of the task and to each other.

Communication
Writes with clarity and demonstrates a sense of voice and audience by using a range of writing techniques related to the form of the task.

Organization of Ideas
Shows evidence of a logical plan and/or focus by organizing ideas and information using appropriate, logical connections.

Application of Language Conventions
Shows application of language conventions by demonstrating general accuracy in spelling, grammar and punctuation.

Writing

Response Journal

"The Rap on Garbage" and "Round and Round Again" tell us that every little bit helps to save our environment.

Think
Think of things that people in your neighbourhood can do to help the environment.

- What needs to be done?
- Who is going to do it?
- How will you know that your plan is working and helping the environment?

Response Journal

Write
Write a journal entry that gives a plan for your neighbourhood.

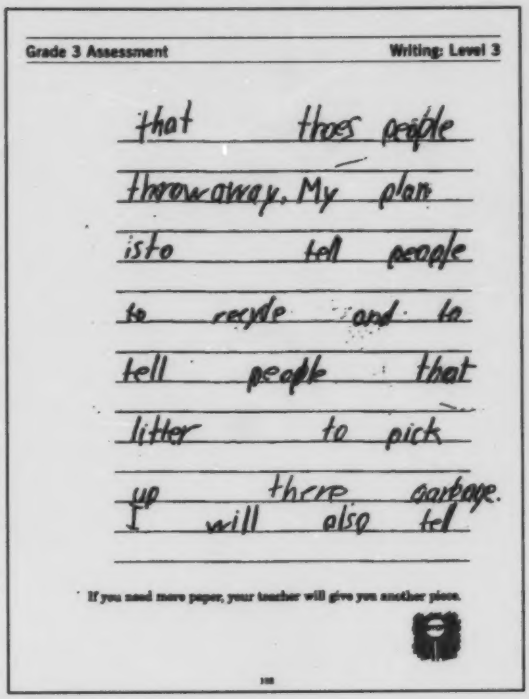
Remember
Write on every other line.

Date: May 17, 2001.

My neighbourhood needs help because not enugh people recyle and they have about 6 bags of garbage. I should start

telling them to recyle and my friends drive to school when they only live about one block away from their. Some people only get things that you threw away

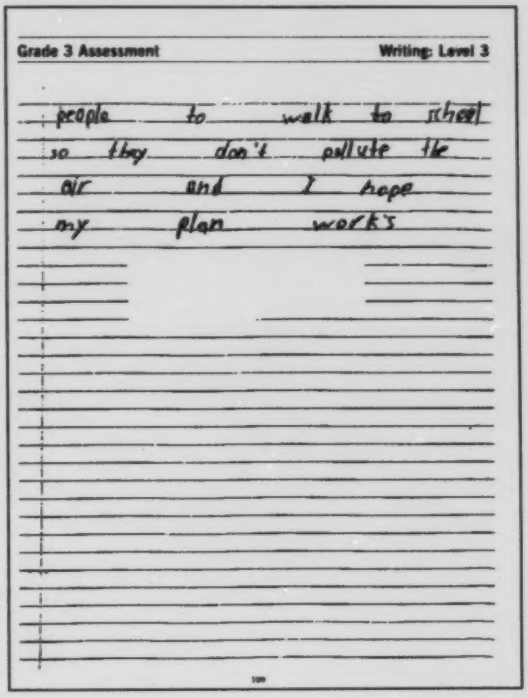
for land. Like just that use plastic bages to throw away. Everyday when I am at school afraid 100 people litter but some people pick up all of the garbage



Grade 3 Assessment — Writing: Level 3

that thros people throwaway. My plan isto tell people to recyle and to tell people that litter to pick up there garbage. I will also tel

If you need more paper, your teacher will give you another piece.



Grade 3 Assessment — Writing: Level 3

people to walk to schol so they don't pullute the air and I hope my plan works

Rationale

Reasoning

- uses ideas of some complexity that are clearly related to the purpose of the task: "My neighbourhood needs help because not enough people recycle..."

Communication

- writes with clarity and demonstrates a sense of voice and audience: "I will tell people to walk to school so they don't pollute ... I hope my plan works."

Organization of Ideas

- shows evidence of appropriate logical connections: "My neighbourhood needs help ... My plan is ... I hope my plan works."

Application of Language Conventions

- uses high frequency words and spells them correctly: "they," "about," "when," "friend," "away," etc.

Grade 6 Writing

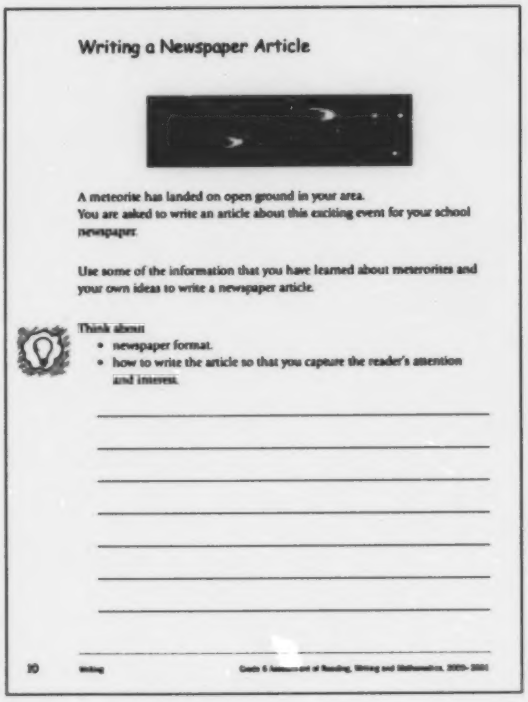
Level 3 Writing Assessment Scale for Grade 6:

Reasoning
Demonstrates reasoning by using ideas of some complexity that are clearly related to the purpose of the task and to each other.

Communication
Writes with clarity and demonstrates a sense of voice and audience by using a range of writing techniques related to the form of the task.

Organization of Ideas
Shows organization and focus by developing ideas and information using appropriate and logical connections.

Application of Language Conventions
Shows application of language conventions by demonstrating general accuracy in spelling, grammar and punctuation.



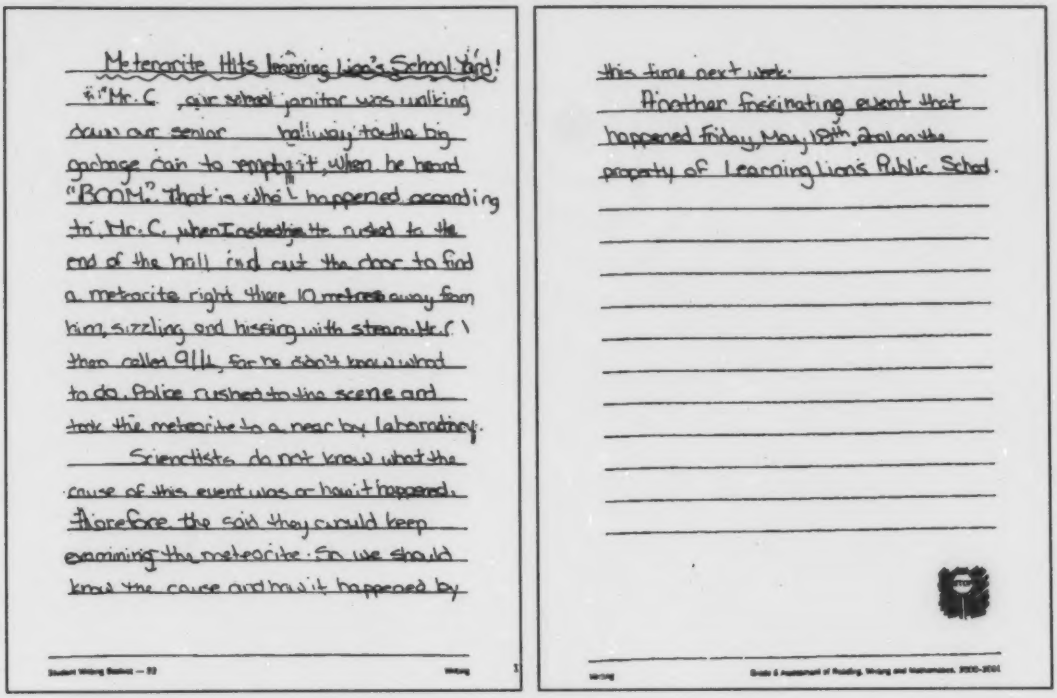
Writing a Newspaper Article

A meteorite has landed on open ground in your area.
You are asked to write an article about this exciting event for your school newspaper.

Use some of the information that you have learned about meteorites and your own ideas to write a newspaper article.

Think about
- newspaper format.
- how to write the article so that you capture the reader's attention and interest.

10 Writing



Meteorite Hits Learning Lion's School Yard!

#1 Mr. C, our school janitor was walking down our senior hallway to the big garbage can to empty it, when he heard "BOOM." That is what happened according to Mr. C. when I asked him. He rushed to the end of the hall and out the door to find a meteorite right there 10 metres away from him, sizzling and hissing with steam. Mr. C then called 911, for he didn't know what to do. Police rushed to the scene and took the meteorite to a near by laboratory.

Scientists do not know what the cause of this event was or how it happened. Therefore the said they would keep examining the meteorite. So we should know the cause and how it happened by this time next week.

Another fascinating event that happened friday, May 15th, 2001 on the property of Learning Lions Public School.

Rationale

Reasoning

- attends to the purpose of the task and uses the form suited to the purpose (e.g., "Meteorite Hits Learning Lion's School Yard.")

Communication

- uses varied writing techniques and a variety of sentence types (e.g., "He rushed to the end of the hall and out the door to find a meteorite right there 10 metres away from him, sizzling and hissing with steam.")
- chooses words appropriate to the purpose (e.g., "examining," "fascinating")
- uses an appropriate sense of audience (e.g., "Police rushed to the scene and took the meteorite to a near by laboratory.")

Organization of Ideas

- conveys a central idea through logical connections and sequence (e.g., "So we should know the cause ... this time next week.")

Application of Language Conventions

- spells and punctuates with general accuracy (e.g., "according," "laboratory," "fascinating")
- uses appropriate capitalization in titles, surnames, dates (e.g., "Learning Lion's Public School")

Sample Mathematics Questions from Each of the Five Strands and Level 3 Student Answers

Strands

- Number Sense and Numeration
- Geometry and Spatial Sense
- Measurement
- Patterning and Algebra
- Data Management and Probability

Note: Markers were assessing mathematics skills, not writing skills, in this section of the assessment.

Grade 3 Mathematics

Level 3 Mathematics Assessment Scale for Grade 3:

Demonstrates and communicates general knowledge and understanding. Uses most required concepts and procedures by consistently choosing, applying, explaining and justifying appropriate operations, procedures and problem-solving strategies to complete tasks with overall accuracy, clarity and precision.

Number Sense and Numeration

2. Mama needs 22 L of paint. She only has $10.00 to spend on paint.

What combination of large and small cans can she buy for $10.00?

Show your work.

1.50
1.50
1.50
1.50
1.50
.50
.50
8.50

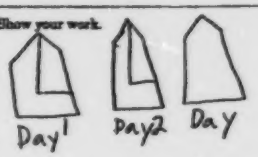
Mama can buy 5 large cans and 2 small cans.
This combination will cost 8.50

Rationale
shows an accurate combination of cans that equals 22 L (e.g., 5 large and 2 small) and correctly adds the cost of the cans (e.g., $8.50)

Measurement

4. Mama is going to paint 2 more sides of her house. They are the same size.
She can only paint for 90 minutes each day.
How many days will it take her to paint the 2 sides.

Show your work.



It will take Mama 3 days to paint the 2 sides.

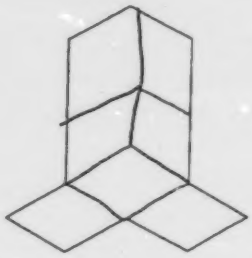
Rationale
determines with general accuracy that it will take 3 days to paint the two sides (e.g., by drawing two sides that show how much painted on one day – ¾)

Geometry and Spatial Sense

Investigation #2

Mama and her Rocketship

1. Mama wants to travel into space. Here is an outline of the plan for Mama's rocketship.



What is the area of Mama's rocketship? Use the blue rhombus shape.

The area is 7 blue rhombuses.

What is the area of the rocketship using the green triangles?

The area is 14 green triangles.

I know this because two Green triangles equal one blue rhombus so if seven rhombuses makes the rocket ship 14 triangles will also make it to.

Rationale

identifies the area of the rocketship as 7 rhombi and explains why the area is 14 triangles (e.g., "two green triangles equals one blue rhombus, so if seven rhombuses makes up the rocket ship 14 green triangles will also make it to.")

Data Management and Probability

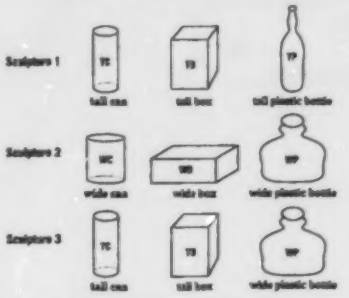
2. The students want to make some sculptures from empty containers.

cans	boxes	plastic bottles
TC tall can	TB tall box	TP tall plastic bottle
WC wide can	WB wide box	WP wide plastic bottle

Each sculpture must have
- only 3 containers, and
- 1 container from each group.

28

The students built 3 sculptures using these combinations:



Have the students used all of the possible combinations?

Explain your thinking.

No they have not because they can make a combindion like "WC, TP, and WB and a few others.

Rationale

accurately cross-classifies to determine that all of the combinations have not been used and states an alternative combination (e.g., "WC, TP, and WB")

Patterning and Algebra

6. One of the Earth Week activities is making a poster. On her poster, Meghan makes a growing pattern of leaves.

Here is Meghan's pattern.

Here is a chart of Meghan's pattern.

Branch	Number of leaves
A	1
B	2
C	4
D	7
E	11
F	16
G	22
H	29

Look at the chart.

How many leaves would be on branch G? 22

Describe the pattern rule.

The pattern rule is to count by ones in adding one more and then another

4

Rationale

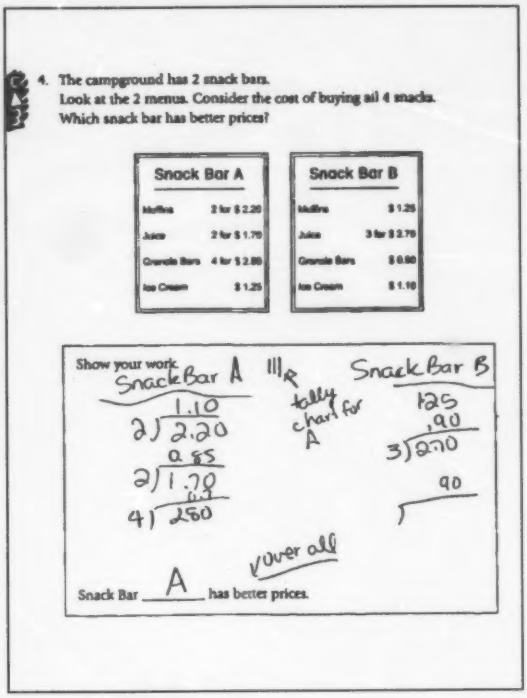
accurately completes and extends the chart and describes the growing pattern rule using appropriate math terms (e.g., "the pattern rule is to count by ones in adding one more and then another")

Grade 6 Mathematics

Level 3 Mathematics Assessment Scale for Grade 6:

Demonstrates and communicates general knowledge and understanding. Uses most required concepts and procedures by consistently choosing, applying, analyzing and justifying appropriate operations, procedures and problem-solving strategies to complete tasks with overall accuracy, clarity and precision.

Number Sense and Numeration



4. The campground has 2 snack bars.
Look at the 2 menus. Consider the cost of buying all 4 snacks.
Which snack bar has better prices?

Snack Bar A	
Muffins	2 for $ 2.20
Juice	2 for $ 1.70
Granola Bars	4 for $ 2.80
Ice Cream	$ 1.25

Snack Bar B	
Muffins	$ 1.25
Juice	3 for $ 2.70
Granola Bars	$ 0.80
Ice Cream	$ 1.10

Show your work.

Snack Bar A — 1.10, 2)2.20, 0.85, 2)1.70, 4)2.80 — tally chart for A — Snack Bar B — 1.25, .90, 3)2.70, 90

Snack Bar A has better prices. (over all)

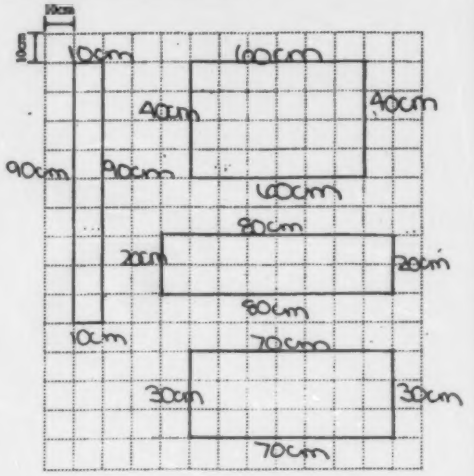
Rationale

uses correct strategy to compare unit price to determine correctly which snack bar has the better prices; conclusion drawn without completing all calculations (e.g., calculates unit prices for each snack bar, but does not provide total price at each snack bar)

Measurement

5. David wants to glue the crystals he found onto a piece of rectangular board. He has a 200 cm strip of wood to go around the perimeter of the board.

On the grid below, draw as many different rectangular boards as possible that have a perimeter of 200 cm.



What is the maximum number of different rectangular boards that could be drawn with a perimeter of 200 cm?

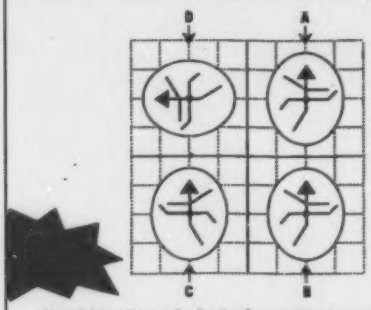
Explain your thinking. theres 4 our different rectangular boards that are possible to have a perimeter of 200cm because you can't go to 50 or lower because they would be squares

Rationale

draws 4 different rectangles with perimeters of 200 cm; missing square; states "...because you can't go to 50 or lower because they would be squares."

Geometry and Spatial Sense

2. David draws the insect stone in 4 places on a sheet of grid paper.



How did David move the drawing from position A to position B to position C to position D? Describe the movements using mathematical language.

A to B David moved it and slided it down to make B

B to C David flipped it to get it in C

C to D David turned C counter clock wise from the original line about C.

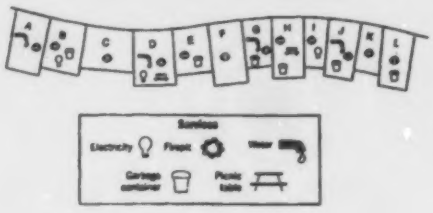
Rationale

describes the transformation of the stone; uses mathematical language to describe 3 transformations and 2 directions, but does not include magnitude/size (e.g., A to B "slided it down"; B to C "flipped"; C to D "turned C counter clock wise")

Data Management and Probability

7. A family of campers arrives at Meteor Lookout Park. They want at least 3 services at their campsite.

Meteor Lookout Provincial Park — Campsite Map



What are the chances of getting a campsite with at least 3 services?

Show your work.

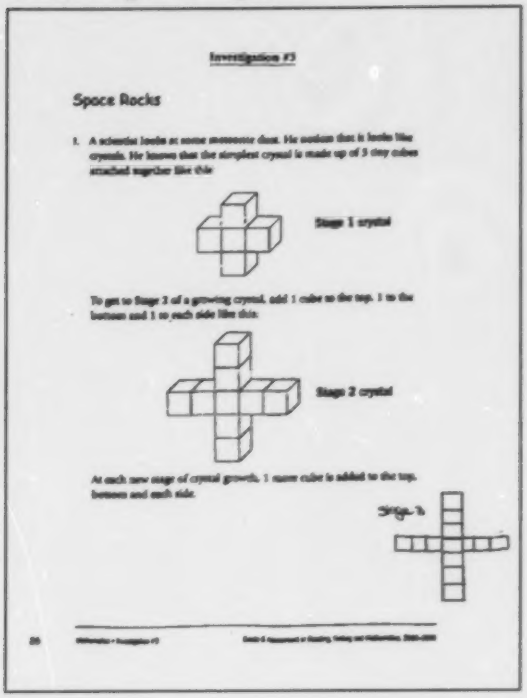
4/12 because this is 12 camp sites out of them all. 4 of them have 3 services in them

The probability of getting a campsite with at least 3 services is 4/12

Rationale

states the probability/chances of getting a campsite with at least 3 services as 4/12; states "4 of them have 3 services in them"

Patterning and Algebra



Investigation #3

Space Rocks

1. A scientist looks at some meteorite dust. He notices that it looks like crystals. He knows that the simplest crystal is made up of 5 tiny cubes attached together like this:

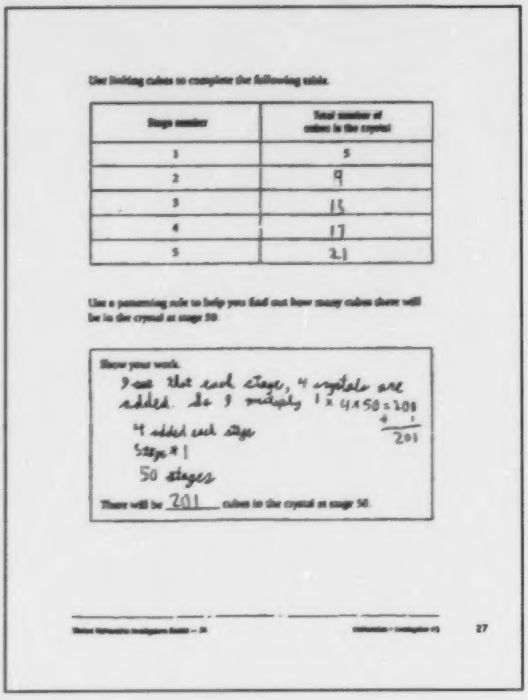
Stage 1 crystal

To get to Stage 2 of a growing crystal, add 1 cube to the top, 1 to the bottom and 1 to each side like this:

Stage 2 crystal

At each new stage of crystal growth, 1 more cube is added to the top, bottom and each side.

Stage 3



Use linking cubes to complete the following table.

Stage number	Total number of cubes in the crystal
1	5
2	9
3	13
4	17
5	21

Use a patterning rule to help you find out how many cubes there will be in the crystal at stage 50.

Show your work.

I see that each stage, 4 crystals are added. So I multiply 1 × 4 × 50 = 201

4 added each stage

Stage # 1

50 stages

There will be 201 cubes in the crystal at stage 50.

27

Rationale

uses a patterning rule correctly to extend the pattern on the chart (e.g., "each stage, 4 crystals are added"); determines how many cubes there will be in the crystal at stage 50 with a minor error, (e.g., "1 × 4 × 50")

The Grade 3 and Grade 6 Assessments of Reading, Writing and Mathematics, 2000–2001

Contents of the Assessment

The Grade 3 and Grade 6 assessments measure how well students have met the provincial expectations in *The Ontario Curriculum, Grades 1–8.* Each assessment covers knowledge and skills in reading, writing and mathematics that students are expected to have acquired by the end of the grade being assessed.

EQAO assessments combine performance-based activities requiring written responses with multiple-choice questions. This combination allows students to demonstrate both the depth and the scope of their learning, and provides a variety of ways for students to demonstrate their achievement.

In reading, students demonstrate their knowledge and skills by reading a variety of materials, including factual information, stories and poetry. The reading components of the assessments measure how well students use various reading strategies and conventions and how effectively they understand concepts, make inferences and connect ideas.

In writing, students demonstrate their knowledge and skills by using a range of written forms and by writing for different purposes. The writing components of the assessments measure how well students use writing strategies and language conventions and how effectively they understand assigned tasks, organize ideas and communicate with a reader. During the Grades 3 and 6 assessments, students produce two pieces of written work. They also select a third writing sample from their work completed earlier in the year.

FAST FACTS:

GRADE 3

Number of

Students: 138,456

Classes: 7,066

Schools: 3,293

GRADE 6

Number of

Students: 137,968

Classes: 6,501

Schools: 3,058

In mathematics, students demonstrate their knowledge and skills by solving problems, applying procedures and explaining how they have arrived at their answers. In addition to measuring how well students use mathematical concepts and procedures, solve problems and communicate their knowledge, the mathematics components of the assessments also test students' knowledge and skills within the five strands of mathematics: Number Sense and Numeration, Geometry and Spatial Sense, Measurement, Patterning and Algebra, and Data Management and Probability.

Administration of the Assessments

The two assessments are conducted annually in May in every publicly funded Ontario elementary school. They both involve students for five days, two-and-a-half hours each day.

In both grades, students complete introductory activities with their classmates and teachers, and then work independently to solve problems, write their responses and answer multiple-choice questions.

Participation in the Assessments

All Grade 3 and Grade 6 students are expected to participate in the assessments. In some circumstances, EQAO allows teachers to provide certain kinds of assistance to students with special needs. In rare instances, a student may need to be exempted from participating in part or all of an assessment. Before granting an exemption, the principal must consult with the student's teacher and parents and obtain written parental consent.

Students identified as Receiving Special Education Support include those students whose Student Information Form (SIF) indicated that they were formally identified by an Identification, Placement and Review Committee (IPRC), as well as those students who were not formally identified but who were receiving special education support. Unless otherwise stated, students in gifted and enrichment programs are excluded from this group.

Marking the Assessments

Each subject area of the assessment contains a written response section as well as a multiple-choice section. The written response section in reading and writing is organized and marked by trained teachers according to the four categories outlined in the curriculum for each subject. In mathematics, teachers mark the five mathematics strands in addition to the four categories. The multiple-choice sections are mechanically scored.

Reporting Results

Overall and Detailed Results

EQAO reports results that provide an overall as well as a detailed picture of Grade 3 and Grade 6 student achievement in reading, writing and

mathematics.

The overall results for each subject are derived by combining the detailed results from the written response section for each subject with the results from the multiple-choice section. For reading and writing, the overall result is derived from five sources of data (four categories and one multiple-choice section). For mathematics, the overall result is derived from ten sources (four categories, five strands and one multiple-choice section).

Levels of Achievement

EQAO reports on student achievement in reading, writing and mathematics using a four-level scale. This scale is based on *The Ontario Curriculum, Grades 1–8* and sets Level 3 as the provincial standard. Markers are trained to assess student written work according to these four levels and the multiple-choice score is also aligned with this scale.

NE Level 1

EQAO's four-level marking scale is aligned with the four-level scale used on the Ontario Student Report Card. NE Level 1, or Not Enough Evidence for Level 1, is the reporting designation for students who have provided enough information to score but who have not demonstrated enough evidence of knowledge and understanding to be assigned Level 1.

Other Designations

Insufficient Information to Score (IIS)

This designation is for student work that is deemed to be insufficient to be assigned a level of achievement, either in a given category or strand within a subject, on the multiple-choice component, or for overall achievement. This is the case if large sections of work are missing due to absence or other reasons.

Exempt and No Data

These designations include students who were formally exempted from participation in one or more components of the assessment and non-exempt students from whom EQAO did not receive completed assessment booklets.

Calibrating Scores

There are three steps in the process of combining information from the performance-based and multiple-choice sections of the assessment:

1. The multiple-choice scores are aligned with the four-point reporting scale.
2. Category, strand, and multiple-choice level scores are then tallied to give a total score.
3. Total scores are then changed back into an overall level score from NE Level 1 to Level 4, using a score range established for each level. (For example, in Reading, a total score of 17 is in the range of achievement for Level 3.)

The establishment of a score range permits the calibration of scores to adjust for variances in the content and marking of the assessment. As a result of this calibration process, it is possible to make adjustments to ensure that the overall scale is constant from year to year. For example, an overall Level 3 on an assessment means the same thing from year to year.

Comparing Assessment Results from Year to Year

With the publication of this report, educators, parents, policy-makers and members of the public now have four years of Grade 3 achievement data and three years of Grade 6 achievement data based on the current curriculum expectations. They also have four years of contextual data from the questionnaires that students, teachers and principals completed during the assessments.

With these data it is possible to identify some important trends over time. However, it is important to emphasize that some comparisons are valid and meaningful and others should be avoided.

The overall levels of achievement are comparable from year to year. The method EQAO uses to calculate the overall levels of achievement in reading, writing and mathematics allows the calculation of these scores to be reported on the same scale from one year to the next.

On the other hand, modifications and refinements in the design and marking of the performance-based components of the assessments create potential sources of variation in results from year to year for the category and strand scores. This means that the category and strand scores are not directly comparable from year to year. However, parents and teachers are encouraged to examine students' category and strand scores using students' test booklets and the samples of student work provided by EQAO. This will help them to determine students' strengths and weaknesses in the categories and strands in comparison to all students who wrote the test. School boards are encouraged to analyze their category and strand results in terms of the provincial results, and schools are encouraged to analyze their results in terms of both the provincial and school board results to gain an understanding of strengths and weaknesses in their students' achievement relative to the larger population.

The multiple-choice component of the assessment includes overlapping questions from year to year.[1] These questions are not subject to change. The analysis of student responses to these common questions from the previous year indicates if there are any changes in student performance. This information, along with the distribution of scores from the previous years, provides a mechanism for measuring year-to-year consistency and a basis for adjusting results where necessary to ensure year-to-year consistency.

[1] The 2000–2001 Grade 3 and Grade 6 assessments contained four different versions of the multiple-choice component. These versions, representing the same curriculum strands, were distributed evenly across the province.

Examining Grades 3 and 6 Results

The Grade 3 and Grade 6 reading, writing and mathematics results are presented together to provide a sense of the patterns in each subject that extend across the two grades. Taken together, these results from the two assessments (both the achievement data and the data from the various questionnaires) clarify and enhance the emerging picture of student achievement in Ontario.

Trends Over Time
Overall Achievement at Level 3 and Above*

Grade 3
English

	1997–1998	*1998–1999*	*1999–2000*	*2000–2001*
Reading	46%	45%	49%	49%
Writing	49%	52%	52%	52%
Mathematics	43%	56%	57%	61%

Grade 6
English

	1998–1999	*1999–2000*	*2000–2001*
Reading	48%	50%	55%
Writing	48%	48%	53%
Mathematics	46%	51%	54%

* These percentages are based on Method 1.

2000–2001: Overall Achievement at a Glance

☐ Method 1

In Method 1 all data are reported. Method 1 expresses the number of students achieving at each level as a percentage of all of the students in the grade, including students who were exempted and those who took part in the assessment but did not produce enough work to be scored.

Method 1 is EQAO's primary method of reporting because publicly funded schools are accountable for the achievement and progress of all students. Schools and school boards are required to use this method to ensure consistency of reporting across the province.

☐ Method 2

Method 2 is an alternative way of presenting the data. Method 2 expresses the distribution of student results as a percentage of those students who actually took part in the assessment and produced at least some work that could be scored. Students who were exempt, or for whom we have no performance data, are excluded.

Method 2 highlights the results achieved by students who have at least some scorable work.

Due to rounding, percentages may not always total 100.
Overall scores are adjusted for year-to-year differences in assessments.

Overall Level of Achievement in Reading — Grade 3

	Exempt	No Data	Insufficient Information to Score	NE Level 1	Level 1	Level 2	Level 3	Level 4
				Provides enough information to score, but does not demonstrate enough evidence of knowledge and understanding to assign Level 1	Demonstrates limited knowledge, understanding and application of reading skills	Demonstrates some knowledge, understanding and application of reading skills	Demonstrates general knowledge, understanding and application of reading skills	Demonstrates thorough knowledge, understanding and application of reading skills
Method 1	6	1	7	< 1	9	28	45	5
Method 2	N/A	N/A	7	< 1	10	30	48	5

Overall Level of Achievement in Reading — Grade 6

	Exempt	No Data	Insufficient Information to Score	NE Level 1	Level 1	Level 2	Level 3	Level 4
				Provides enough information to score, but does not demonstrate enough evidence of knowledge and understanding to assign Level 1	Demonstrates limited knowledge, understanding and application of reading skills	Demonstrates some knowledge, understanding and application of reading skills	Demonstrates general knowledge, understanding and application of reading skills	Demonstrates thorough knowledge, understanding and application of reading skills
Method 1	4	< 1	3	< 1	8	30	47	8
Method 2	N/A	N/A	4	< 1	8	31	49	8

Overall Level of Achievement in Writing — Grade 3

	Exempt	No Data	Insufficient Information to Score	NE Level 1	Level 1	Level 2	Level 3	Level 4
				Provides enough information to score, but does not demonstrate enough evidence of knowledge and understanding to assign Level 1	Demonstrates limited knowledge, understanding and application of writing skills	Demonstrates some knowledge, understanding and application of writing skills	Demonstrates general knowledge, understanding and application of writing skills	Demonstrates thorough knowledge, understanding and application of writing skills
Method 1	5	1	6	0	2	34	45	7
Method 2	N/A	N/A	6	0	3	36	48	7

Overall Level of Achievement in Writing — Grade 6

	Exempt	No Data	Insufficient Information to Score	NE Level 1	Level 1	Level 2	Level 3	Level 4
				Provides enough information to score, but does not demonstrate enough evidence of knowledge and understanding to assign Level 1	Demonstrates limited knowledge, understanding and application of writing skills	Demonstrates some knowledge, understanding and application of writing skills	Demonstrates general knowledge, understanding and application of writing skills	Demonstrates thorough knowledge, understanding and application of writing skills
Method 1	4	< 1	5	0	7	32	43	10
Method 2	N/A	N/A	5	0	7	33	44	10

Overall Level of Achievement in Mathematics — Grade 3

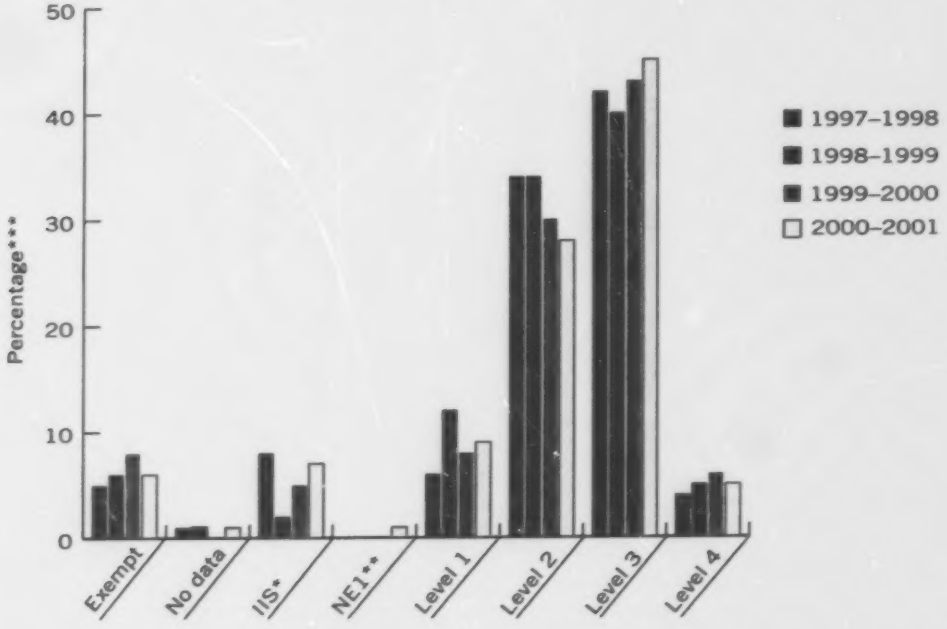
	Exempt	No Data	Insufficient Information to Score	NE Level 1	Level 1	Level 2	Level 3	Level 4
				Provides enough information to score, but does not demonstrate enough evidence of knowledge and understanding to assign Level 1	Demonstrates limited knowledge, understanding and application of mathematics skills	Demonstrates some knowledge, understanding and application of mathematics skills	Demonstrates general knowledge, understanding and application of mathematics skills	Demonstrates thorough knowledge, understanding and application of mathematics skills
Method 1	5	1	4	0	4	26	49	11
Method 2	N/A	N/A	5	0	4	28	52	12

Overall Level of Achievement in Mathematics — Grade 6

	Exempt	No Data	Insufficient Information to Score	NE Level 1	Level 1	Level 2	Level 3	Level 4
				Provides enough information to score, but does not demonstrate enough evidence of knowledge and understanding to assign Level 1	Demonstrates limited knowledge, understanding and application of mathematics skills	Demonstrates some knowledge, understanding and application of mathematics skills	Demonstrates general knowledge, understanding and application of mathematics skills	Demonstrates thorough knowledge, understanding and application of mathematics skills
Method 1	4	< 1	3	0	9	30	42	12
Method 2	N/A	N/A	4	0	9	31	44	12

Results, Analysis and Recommendations for Reading

Overall Student Achievement — Grade 3 Reading, 1997–1998 to 2000–2001



Four-Year Trend in Grade 3 Reading:
Overall Achievement at Level 3 and Above

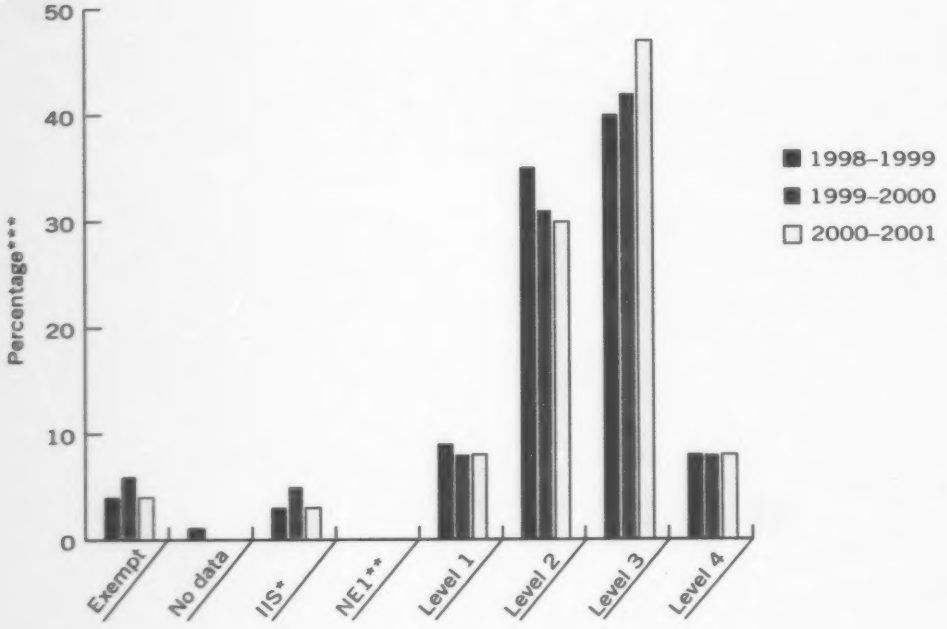
1997–1998	1998–1999	1999–2000	2000–2001
46%	45%	49%	50%

Overall achievement in Grade 3 reading has shown little improvement over the past four years:

- In 2000–2001, 50% of students achieved at or above the provincial standard (Level 3). This is virtually the same as in 1999–2000 and only marginally higher than in 1997–1998 and 1998–1999.
- There has been little change over the past four years in the numbers of students achieving below the provincial standard. In 2000–2001, 37% of students achieved at Levels 1 and 2. A further 7% of students produced insufficient information to score.
- The exemption rate for Grade 3 reading in 2000–2001 was 6%. This is down slightly from 1999–2000 and consistent with the exemption rates in 1997–1998 and 1998–1999.

*Insufficient Information to Score
**Not Enough Evidence for Level 1
***Unless otherwise noted, all percentages are based on Method 1 reporting as described in the 2000–2001: Overall Achievement at a Glance section.

Overall Student Achievement — Grade 6 Reading, 1997–1998 to 2000–2001



Three-Year Trend in Grade 6 Reading:
Overall Achievement at Level 3 and Above

1998–1999	*1999–2000*	*2000–2001*
48%	50%	55%

Overall achievement in Grade 6 reading has shown some improvement over the past three years:

- **In 2000–2001, 55% of students achieved at or above the provincial standard (Level 3). This is up 7% from 1998–1999.**
- **The increase in the percentage of students achieving at the higher level, has resulted in a decrease in the numbers of students achieving below the provincial standard. In 2000–2001, 38% of students achieved at Levels 1 and 2. A further 3% of students produced insufficient information to score.**
- **The exemption rate for Grade 6 reading in 2000–2001 was 4%. This is down slightly from 1999–2000 and consistent with the exemption rate in 1998–1999.**

*Insufficient Information to Score
**Not Enough Evidence for Level 1
***Unless otherwise noted, all percentages are based on Method 1 reporting as described in the 2000–2001: Overall Achievement at a Glance section.

Overall Achievement in Reading at Levels 3 and 4 by Subgroups, 2000–2001

	Grade 3		Grade 6	
Gender	Girls 54%	Boys 43%	Girls 63%	Boys 48%
Language	Non-ESL 50%	ESL 21%	Non-ESL 56%	ESL 22%
Special Education Support	Not Receiving Support 55%	Receiving Support 12%	Not Receiving Support 61%	Receiving Support 22%

In both grades, a higher percentage of girls than boys achieved at Levels 3 and 4. This gap has remained constant since province-wide testing began. Non-ESL students achieved higher results than ESL students. Students not receiving special education support achieved higher results than students receiving special education support.

Students who Received any Accommodation(s) in Reading

	1997–1998	1998–1999	1999–2000	2000–2001
Grade 3	22%	25%	25%	18%
Grade 6	n/a	24%	17%	12%

*Student Achievement — Grade 3 Reading by Category, 2000–2001**

The following category results provide a detailed picture of how well students did on the reading components of the 2000–2001 assessment. Unlike the overall results, which are comparable from year to year, category results relate to questions and tasks in a particular assessment and cannot be compared from year to year. Category results highlight those areas of the assessment in which students did well as well as those in which they had difficulty. Schools will find it useful to compare their category results from this year's assessment with their board's category results and the provincial category results below. School boards will find it useful to compare their category results with the provincial category results below.

Knowledge/Skills Categories	*Exempt*	*No Data*	*IIS***	*NE1****	*Level 1*	*Level 2*	*Level 3*	*Level 4*
Reasoning: Selects, describes, interprets and analyzes relevant information and ideas from a text to show understanding								
Method 1	6	1	4	< 1	14	52	22	1
Method 2	N/A	N/A	4	< 1	15	56	24	1
Communication: Uses the information and ideas in different contexts by connecting them to personal knowledge and experiences and to other readings								
Method 1	6	1	3	< 1	13	54	21	1
Method 2	N/A	N/A	3	< 1	14	58	23	1
Organization of Ideas: Identifies and describes different organizational forms and characteristics of texts (stories, articles and poems) and uses this knowledge to aid understanding								
Method 1	6	1	5	1	20	48	19	1
Method 2	N/A	N/A	5	1	21	52	20	1
Application of Language Conventions: Identifies and explains the use of appropriate language conventions (e.g., phonics, spelling, grammar, punctuation and style)								
Method 1	6	1	4	1	10	36	37	5
Method 2	N/A	N/A	5	1	11	39	40	5

*Category scores are not adjusted for year-to-year differences in assessments.
**IIS = Insufficient Information to Score
***NE1 = Not Enough Evidence for Level 1

*Student Achievement — Grade 6 Reading by Category, 2000–2001**

The following category results provide a detailed picture of how well students did on the reading components of the 2000–2001 assessment. Unlike the overall results, which are comparable from year to year, category results relate to questions and tasks in a particular assessment and cannot be compared from year to year. Category results highlight those areas of the assessment in which students did well as well as those in which they had difficulty. Schools will find it useful to compare their category results from this year's assessment with their board's category results and the provincial category results below. School boards will find it useful to compare their category results with the provincial category results below.

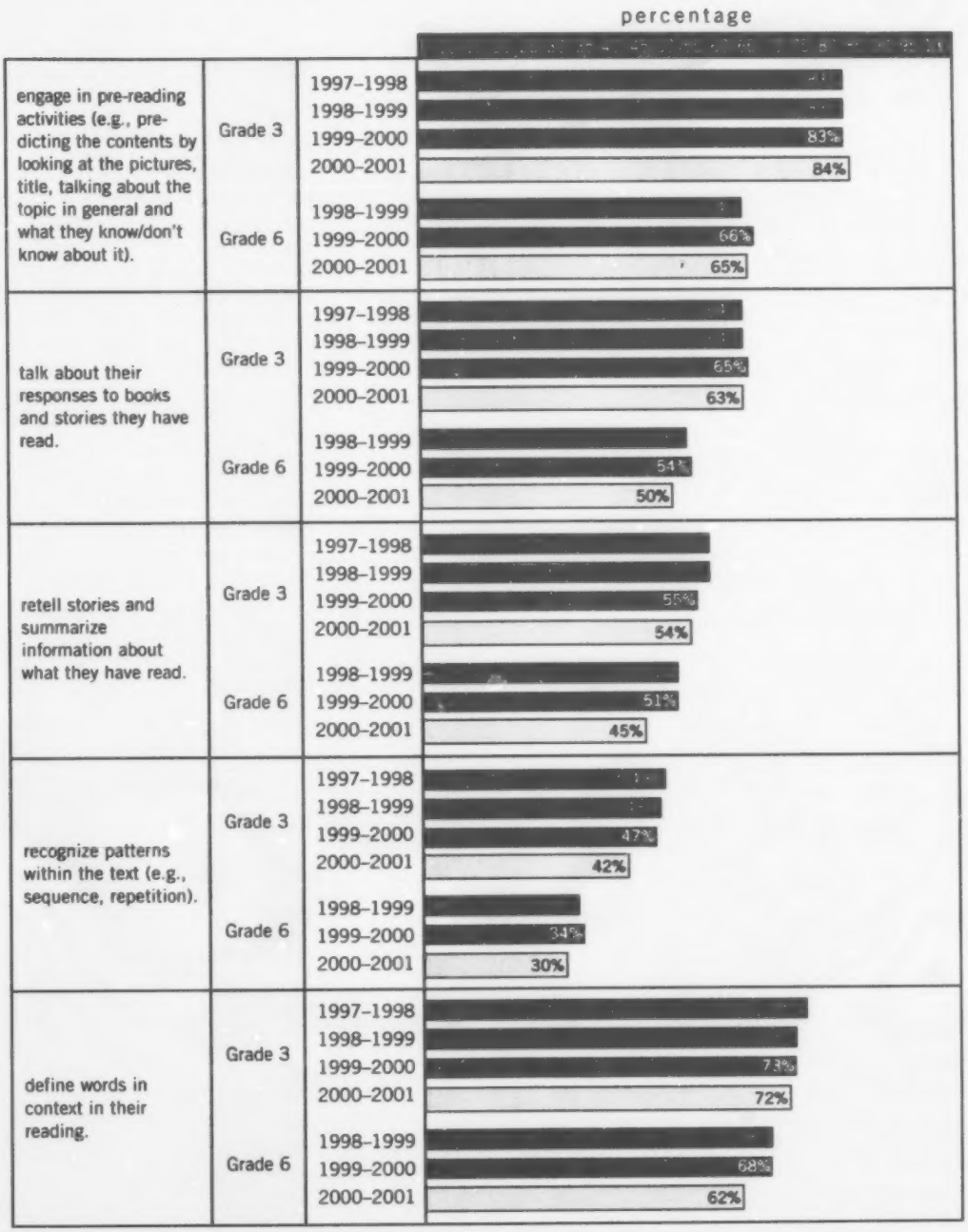
Knowledge/Skills Categories	*Exempt*	*No Data*	*IIS***	*NE1****	*Level 1*	*Level 2*	*Level 3*	*Level 4*
Reasoning: Selects, describes, interprets and analyzes relevant information and ideas from a text to show understanding								
Method 1	4	1	2	< 1	8	44	37	4
Method 2	N/A	N/A	2	< 1	8	46	38	5
Communication: Uses the information and ideas in different contexts by connecting them to personal knowledge and experiences and to other readings								
Method 1	4	1	2	< 1	7	45	36	5
Method 2	N/A	N/A	2	< 1	8	47	38	6
Organization of Ideas: Identifies and describes different organizational forms and characteristics of texts (stories, articles and poems) and uses this knowledge to aid understanding								
Method 1	4	1	2	< 1	12	43	34	5
Method 2	N/A	N/A	2	< 1	13	45	35	5
Application of Language Conventions: Identifies and explains the use of appropriate language conventions (e.g., spelling, grammar, punctuation and style)								
Method 1	4	1	2	< 1	15	36	37	5
Method 2	N/A	N/A	2	1	16	38	39	6

*Category scores are not adjusted for year-to-year differences in assessments.
**IIS = Insufficient Information to Score
***NE1 = Not Enough Evidence for Level 1

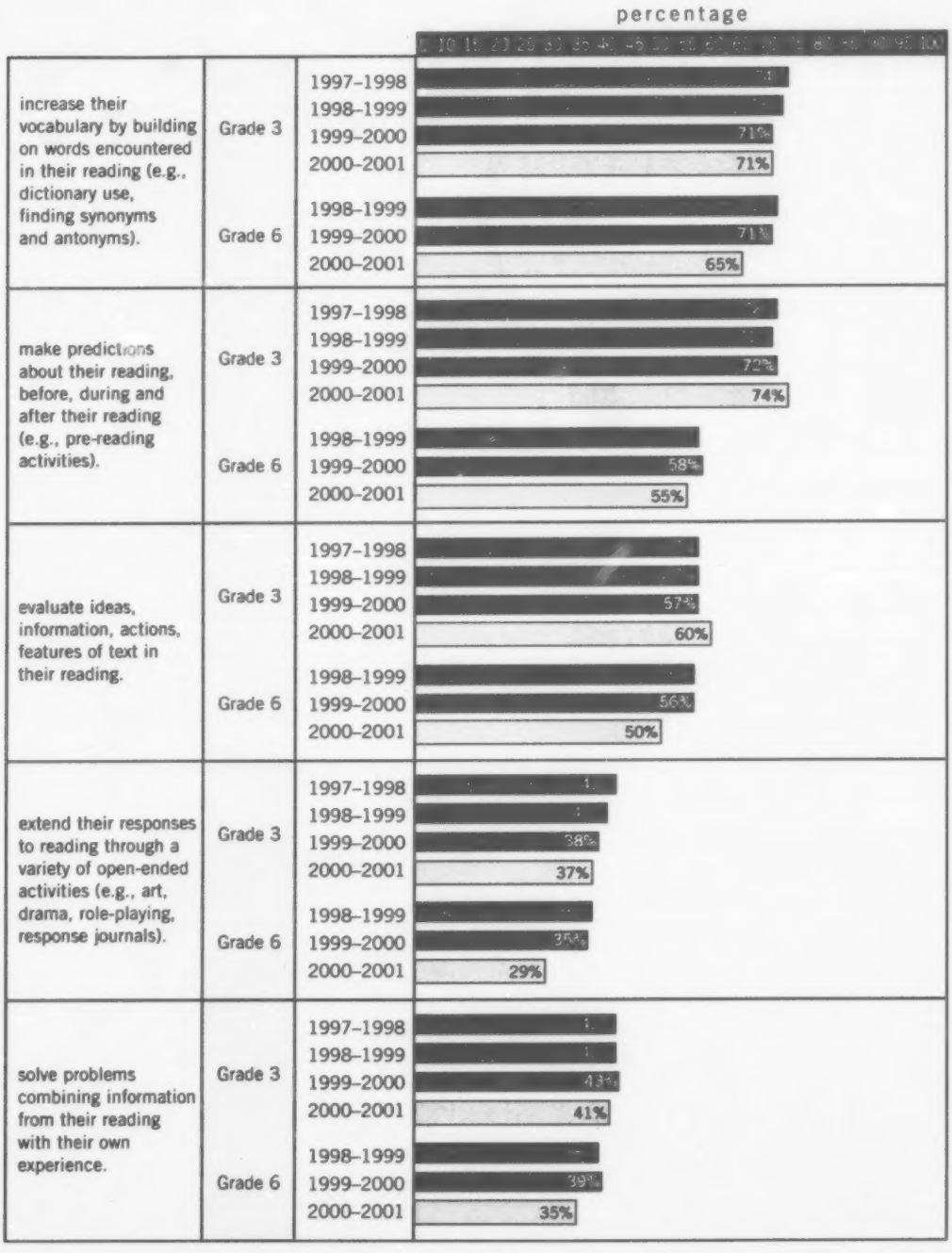
Relevant Findings from the Teacher Questionnaire

Using the Reading Process

*Teachers who indicate that **at least a few times a week** they have their students*

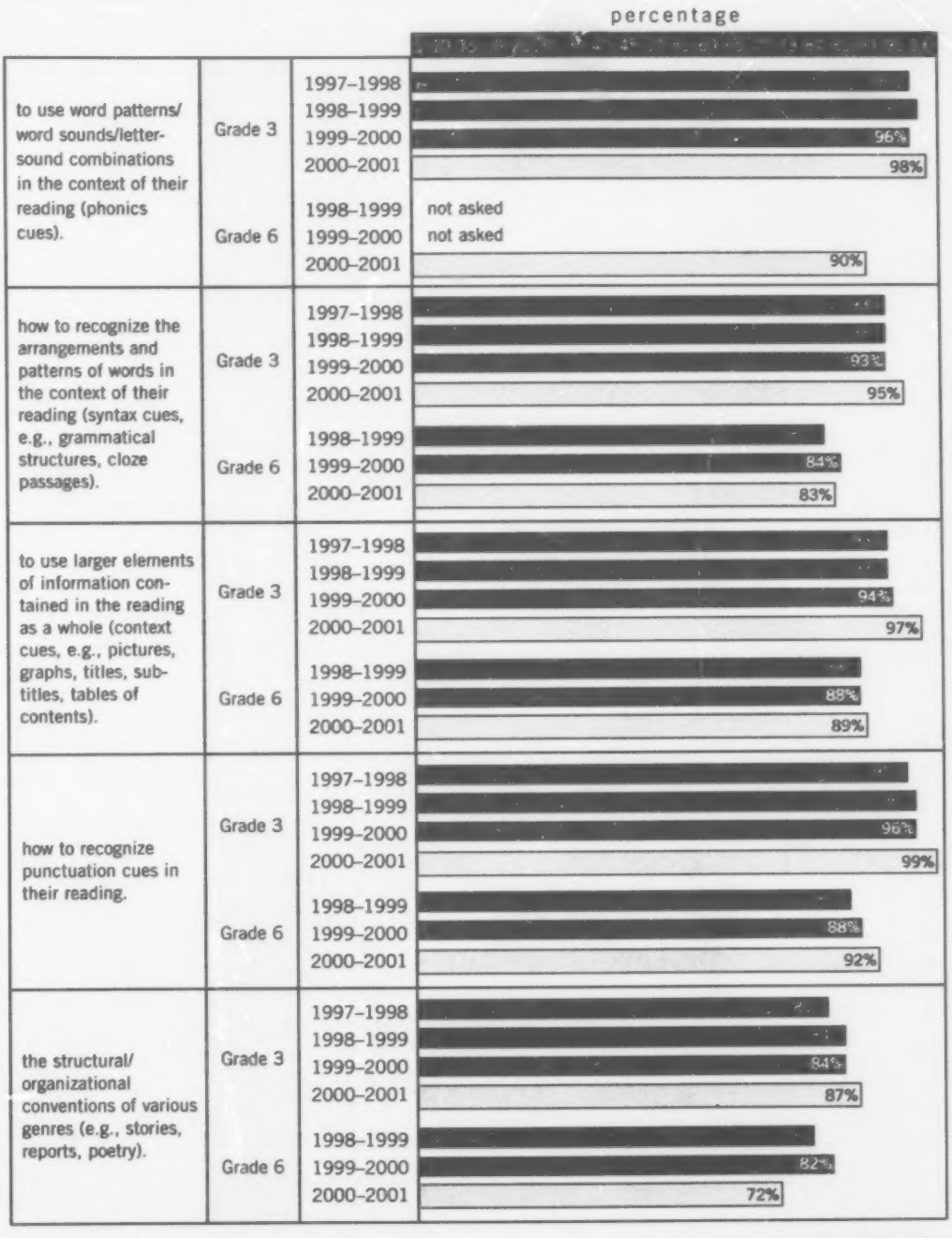


*Teachers who indicate that **at least a few times a week** they have their students*



Teaching Key Reading Strategies

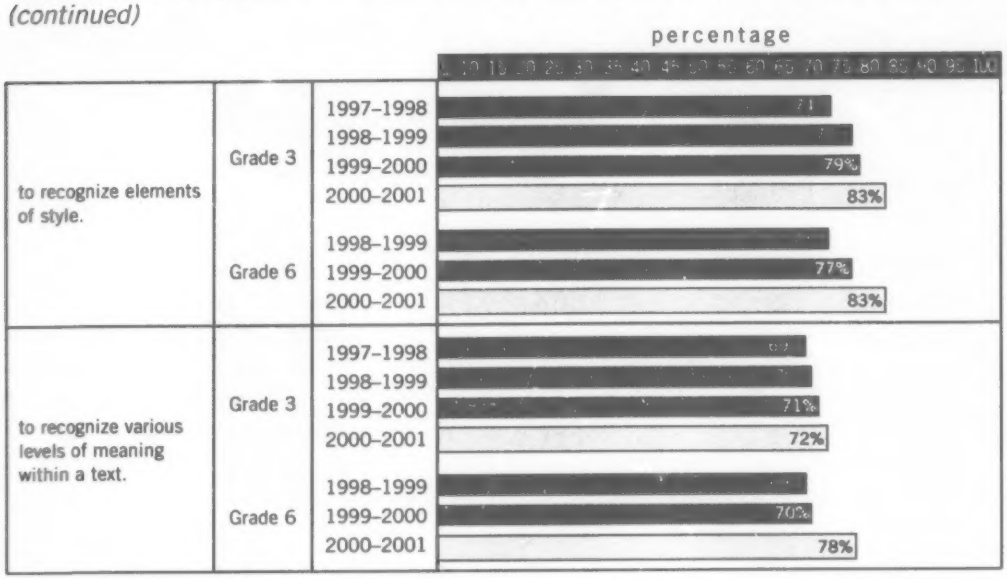
*Teachers who indicate that **at least a few times a month** they teach their students*



continued...

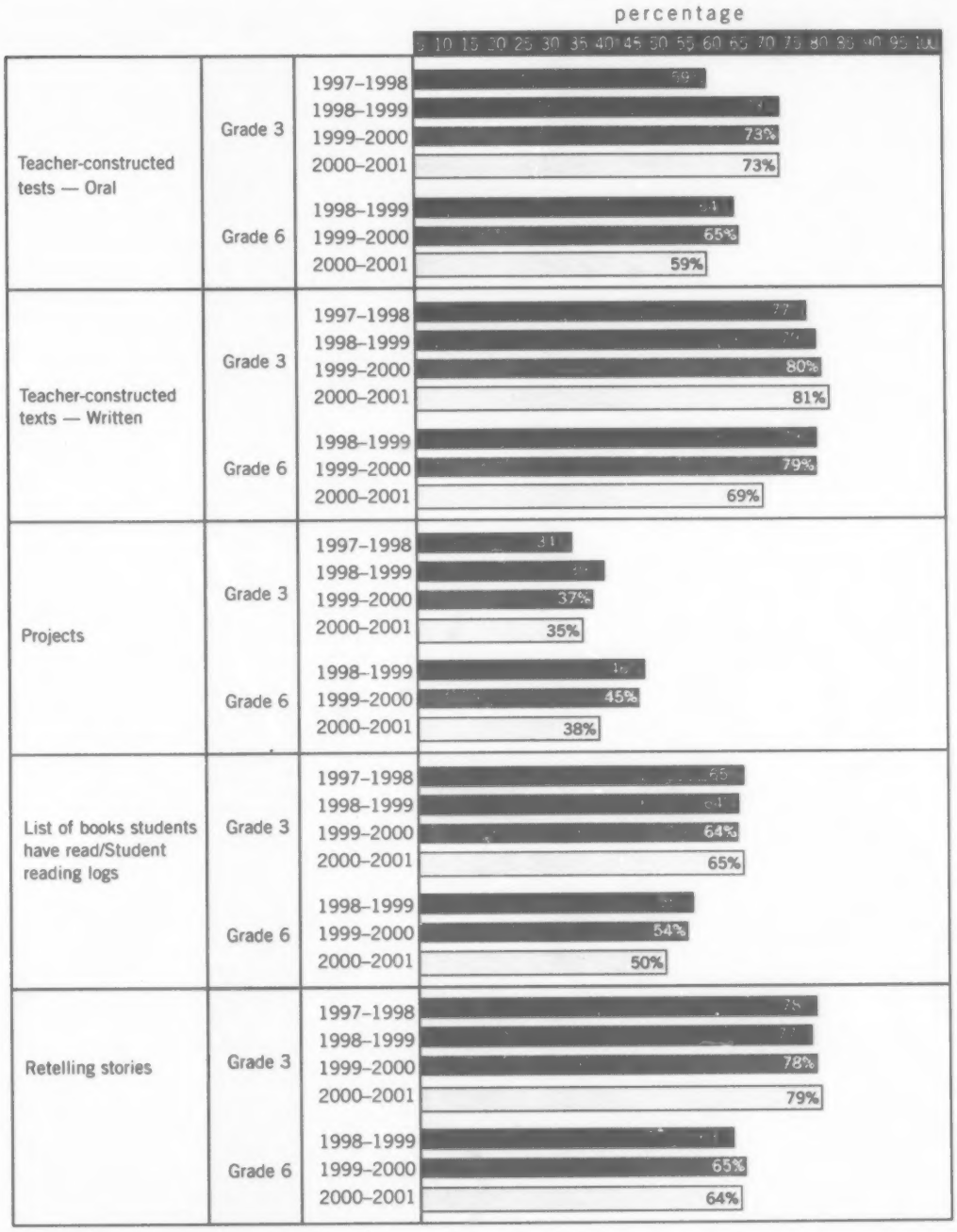
Teaching Key Reading Strategies

*Teachers who indicate that **at least a few times a month** they teach their students (continued)*



Assessing Reading

*Teachers who indicate that **at least a few times a month** they use the following materials and strategies in assessing their students' progress in reading:*



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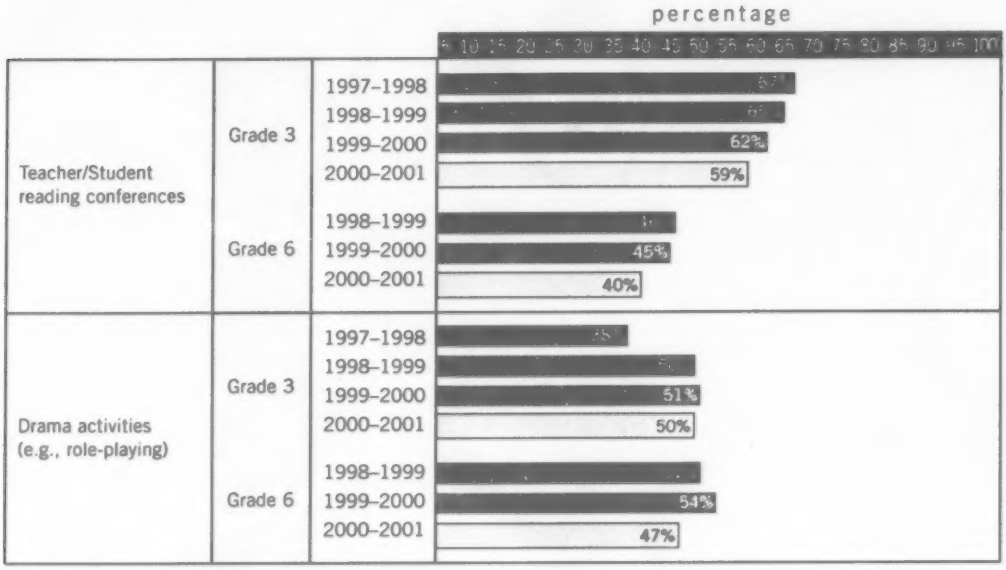
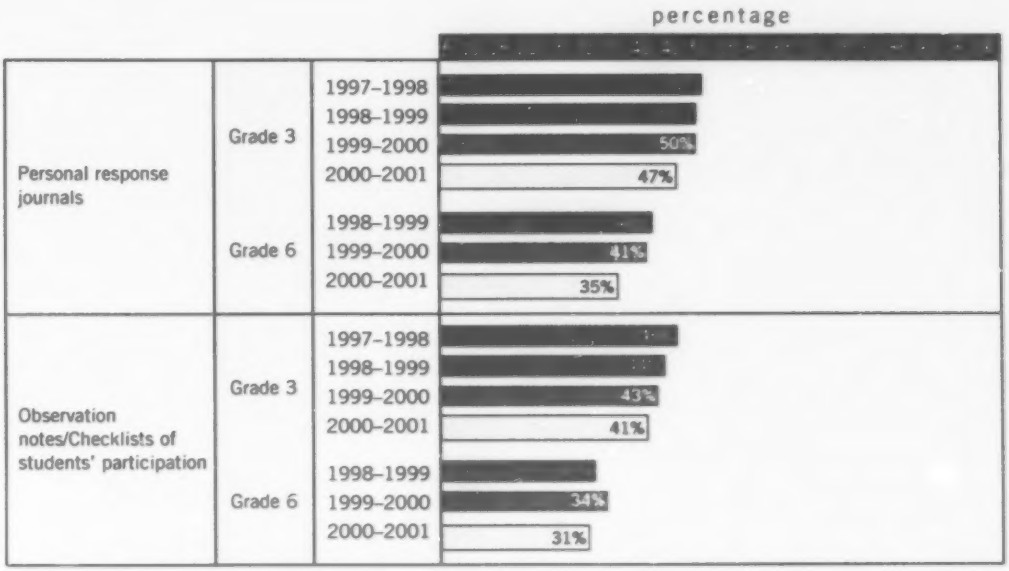
*Teachers who indicate that **at least a few times a month** they use the following materials and strategies in assessing their students' progress in reading (continued):*

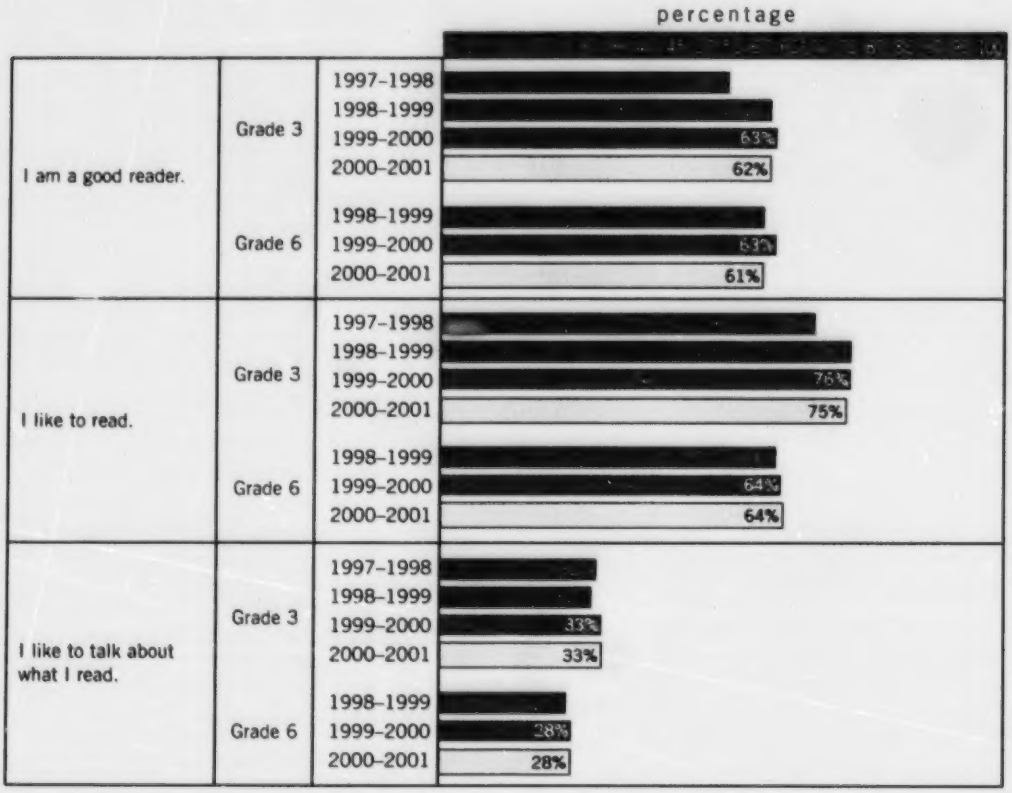


*Teachers who indicate that **at least a few times a week** they use the following materials and strategies in assessing their students' progress in reading:*



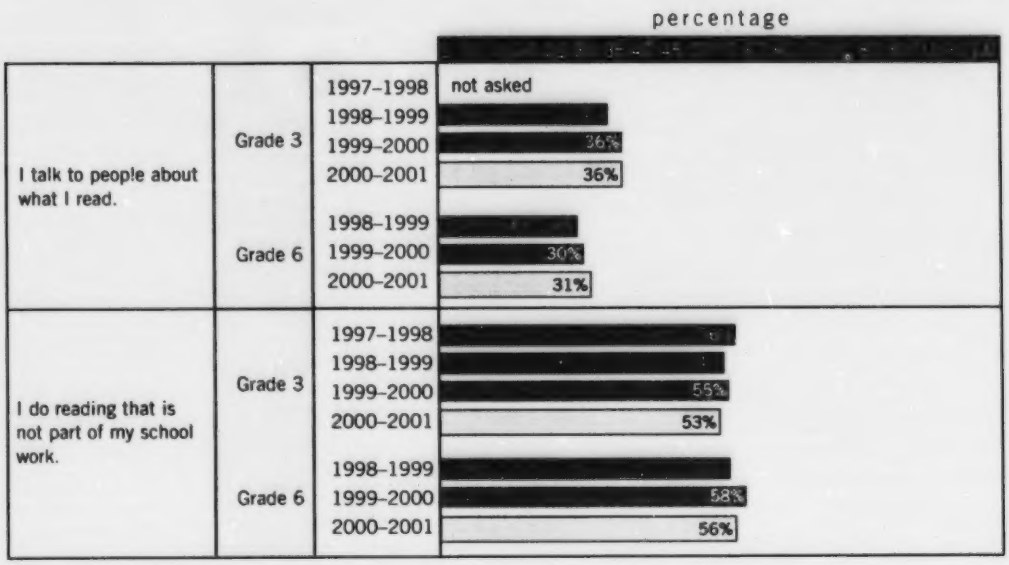
Relevant Findings from the Student Questionnaire

Student Attitudes Toward Reading



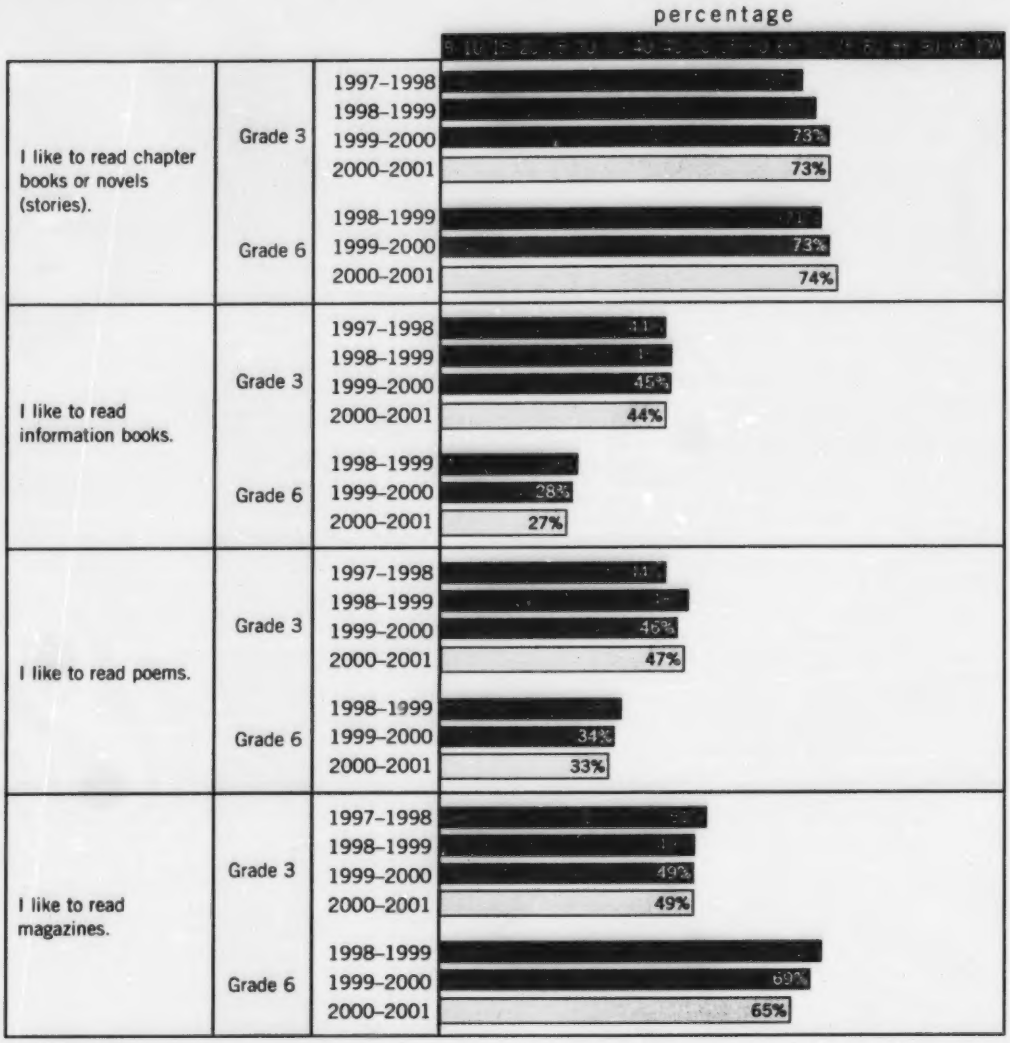
There are persistent gender differences in student attitudes toward reading in both grades. In Grade 3 and Grade 6, the proportion of girls who indicate that they are good readers and that they like to talk to people about what they have read is roughly 5 percentage points higher than the proportion of boys. Also, in both grades, the proportion of girls who indicate that they like to read is roughly 14 percentage points higher.

Student Reading Habits



In Grade 3, the percentage of girls and boys who indicate that they like to talk to people about their reading is roughly the same, but in Grade 6, slightly more girls than boys indicate that they like to talk to people about what they read. There are gender differences in both grades in the proportion of girls and boys who do reading that is not part of their school work. In Grade 3, the proportion of girls is 10 percentage points higher and in Grade 6, 15 percentage points higher.

Student Reading Preferences

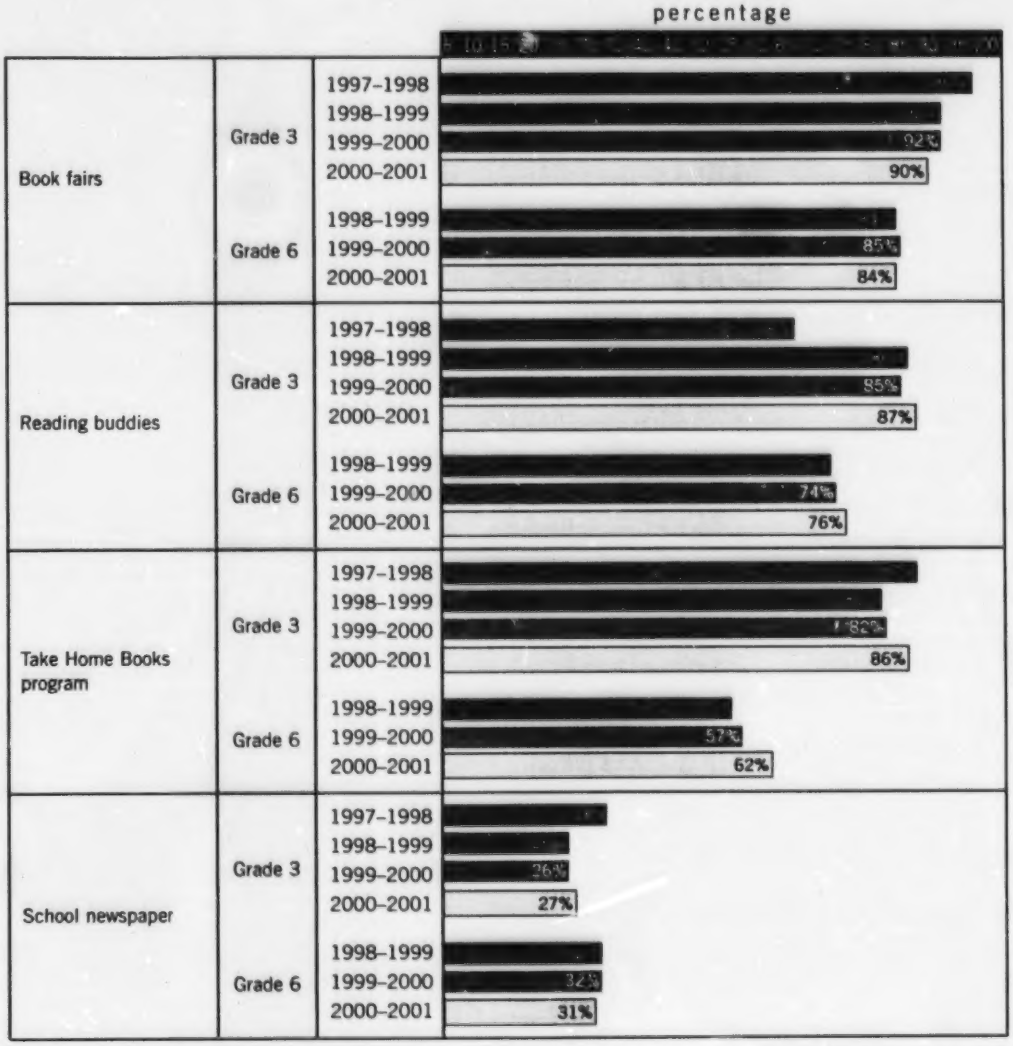


There are some persistent gender differences in reading preferences. In Grade 3, the proportion of girls who indicate that they like reading chapter books or novels is 6 percentage points higher than the proportion of boys, and in Grade 6, this increases to 13 percentage points. In Grade 3, the percentage of boys who indicate they like reading information books is 8 percentage points higher and in Grade 6, 13 percentage points higher. In both grades, the proportion of girls who indicate that they like to read poems is 24 percentage points higher than the proportion of boys. In Grade 3, the percentage of girls and boys who indicate they like to read magazines is roughly the same, but by Grade 6, the proportion of girls who like reading magazines is 18 percentage points higher.

Relevant Findings from the Principal Questionnaire

Schoolwide Reading Opportunities

Principals who indicate that their school has provided the following opportunities for students:



Observations and Suggestions Made by Trained Teacher Markers at the Marking Sites

At the end of the marking period, the trained teacher markers were asked to synthesize their observations about the student work they had been marking over the two-week period and provide suggestions to teachers to enhance and improve student learning. Markers for each subject provided both general and specific observations and suggestions. There is considerable similarity between the observations and suggestions made by Grade 3 and Grade 6 teacher markers this year and the observations and suggestions made by teacher markers last year.

READING

Grade 3 and Grade 6

General Observations and Suggestions:

- Students are responding to fiction much better than to non-fiction. Teachers need to include more non-fiction in their programs and focus more on the reading skills required for reading non-fiction.
- Students are not fully understanding and interpreting the questions; for example, many are interpreting "how" questions as "what" questions and are having difficulty answering two-part questions. Teachers need to provide opportunities for students to examine the intent of various types of questions by focusing on the different meanings and task requirements of key verbs (e.g., explain, describe, identify, list, prove) and on how the question directs the student to go about the task.
- Students are having difficulty supporting and/or expanding their responses and selecting relevant details from the text. Teachers need to ensure that students back up their responses to their reading by being asked to "give reasons," "connect ideas" and "prove and/or support" their opinions.

Specific Observations and Suggestions by Category:

Grade 3

In the category Reasoning, students have fairly good control over reasoning processes in fiction, but in non-fiction material teachers need to focus on having them

- begin to make inferences,
- find and support main ideas
- make comparisons
- understand the difference between "restating" and "explaining" ideas.

In the category Communication, some students are able to draw on their own personal experience to go beyond the text, but generally teachers need to focus on having them

- reflect on the materials they are reading in terms of the meaning of the ideas to them and their application to real life
- understand how to link personal knowledge and experience to their reading materials, both fiction and non-fiction.

In the category Organization of Ideas, students have a good general understanding of organizational tools, particularly those used in poetry, but teachers need to focus on having them

- understand the different organizational and presentational forms of non-fiction, for example, understand graphic organizers and how to connect information in boxes and sidebars to the information in the text.
- identify and differentiate the characteristics of different forms of written material, for example the characteristics of a story and those of a poem.

In the category Application of Language Conventions, most students are able to identify vowel sounds and simple punctuation marks, but teachers need to focus on having them

- identify the parts of speech and understand their function
- work on syllabication of words in context rather than words in isolation.

Specific Observations by Category: Grade 6

In the category Reasoning, students are able to make some inferences and draw conclusions, particularly in fiction, but teachers need to focus on having them

- understand clearly the distinction between and among such concepts as "main idea," "theme," "summary," and "plot"
- connect evidence clearly to the text
- be more precise in their thinking and focus more on quality than on quantity in their responses.

In the category Communication, students are showing a great deal of creativity and imagination in their answers, but teachers need to focus on having them

- make more connections from the text to their own experiences
- understand how to answer extended-response questions

In the category Organization of Ideas, students have a good idea of what should be in a story and a strong understanding of the use of charts, but teachers need to focus on having them

- identify and apply the broader range of characteristics of both fiction and non-fiction
- understand the difference between "characteristics" and "character" in fiction.

In the category Application of Language Conventions, students demonstrate a good knowledge of contractions and possessives, but teachers need to focus on having them

- identify, understand and apply parts of speech
- identify, understand and apply language conventions, and grammar in the context of their reading.

Specific Recommendations for Reading

"Although the lists of expectations might suggest that the skills involved in reading are discrete skills, they are in fact aspects of one integrated process that is best applied in a context that students see as meaningful and that encourages them to think creatively and critically about what they are reading." (*The Ontario Curriculum, Grades 1–8: Language*, 1997)

The following recommendations are based on

- the 2000–2001 overall and category-specific achievement results;
- the patterns and trends emerging from the overall results year to year;
- the data collected from the various questionnaires; and
- suggestions from the trained teacher markers at the EQAO reading marking centre.

The recommendations are not new; rather, because there has been little change in the achievement and questionnaire data, particularly in Grade 3, these recommendations reiterate EQAO's specific recommendations from the 1999–2000 *Provincial Report*. It is critical that principals, teachers, and parents examine these recommendations in light of their school's action plan to ensure that they are being addressed in a systematic and focused way.

EQAO recommends that

1. Teachers focus their reading instruction and assessment on the overall and specific expectations for the grade they are teaching, while at the same time recognizing the continuum of skills development throughout the curriculum.

2. Teachers provide students with multiple and regular opportunities to do activities associated with the Reasoning category, which requires students to select, describe, interpret and analyze relevant ideas from both fiction and non-fiction. For example, as they read, have students
   - select supporting information,
   - describe a character's actions,
   - find the main idea, and
   - explain why the writer took his or her position.

3. Teachers provide students with multiple and regular opportunities to do activities associated with the Communication category, which requires students to use ideas and information in different contexts by connecting them to personal knowledge and experiences and other readings. For example, have students
   - give their opinion about what they have read, and
   - support their opinions with ideas from the reading and from their own experience/thinking.

4. Teachers provide students with multiple and regular opportunities to do activities associated with the Organization of Ideas category, which requires students to identify and describe different ways that different forms of texts are organized and to use this knowledge to aid understanding. For example, as they read, have students
   - examine the way in which a particular story or article is organized, and
   - tell how the organization helps them predict what to expect next.

5. Teachers provide students with multiple and regular opportunities to do activities associated with the Application of Language Conventions category, which requires students to identify and explain the use of language conventions up to and including those that are relevant for their grade levels. For example, have students
   - identify the name of a grade-appropriate punctuation mark, and
   - explain how it helps the reader understand the text.

6. Teachers ensure their reading programs offer
   - a balance between fiction and non-fiction materials,
   - types of reading materials that reflect the changing reading patterns of students from early to later grades (e.g., a much stronger preference for magazines is indicated by Grade 6 students than by Grade 3 students), and
   - a variety of content in the materials to appeal to the reading interests of as many students as possible, particularly boys, who seem to require close connection with the content to sustain their interest in what they are reading.

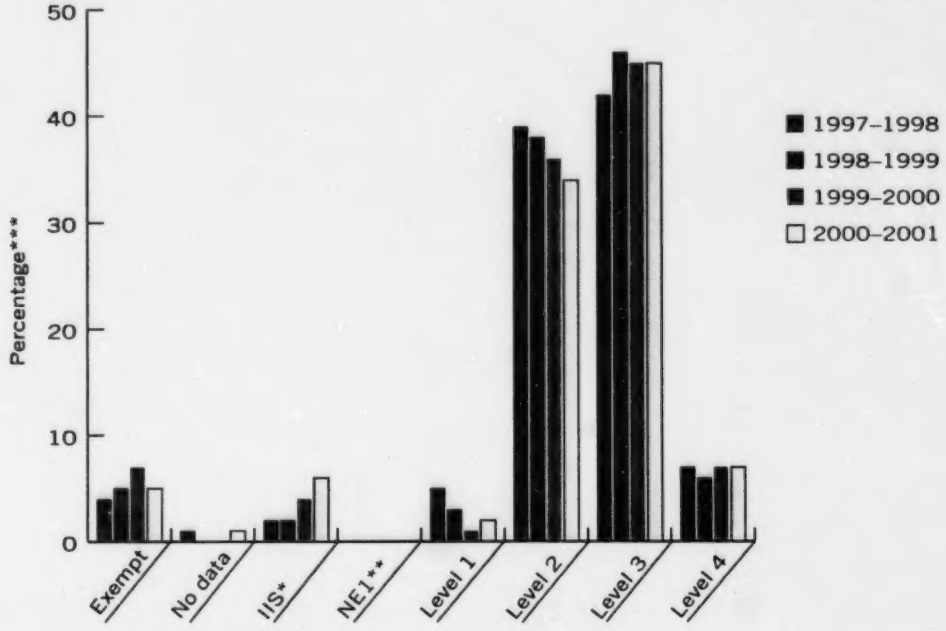
7. Teachers, working with principals, parents, school improvement planning committees and school councils, provide more opportunities for students to engage in dialogue about their reading, particularly in explaining, summarizing and reflecting on the information and ideas and relating the information and ideas to their personal experiences and opinions.

8. Teachers focus on the reading skills required to understand and interpret questions, prompts and instructions, for example,
   - understanding the demands indicated by key words and phrases, and
   - understanding and following the sequencing of multi-step tasks.

9. Teachers, working with principals, recognize the cross-curricular nature of their reading program by embedding instruction in reading skills and reading-related activities in all subjects.

Results, Analysis and Recommendations for Writing

Overall Student Achievement — Grade 3 Writing, 1997–1998 to 2000–2001



Four-Year Trend in Grade 3 Writing:
Overall Achievement at Level 3 and Above

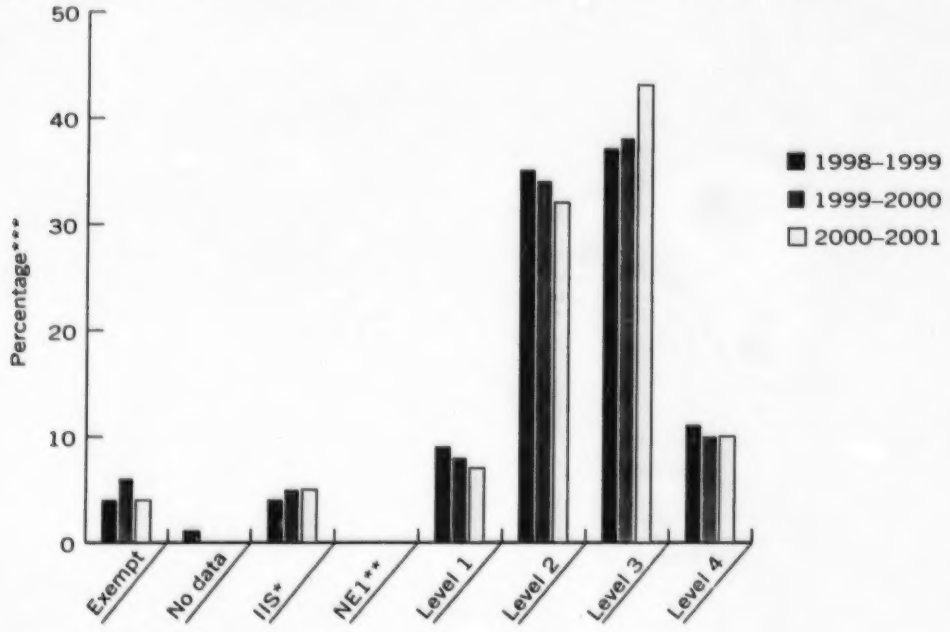
1997–1998	*1998–1999*	*1999–2000*	*2000–2001*
49%	52%	52%	52%

Overall achievement in Grade 3 writing has shown almost no change over the past four years:

- In 2000–2001, 52% of students achieved at or above the provincial standard (Level 3). This is unchanged from 1999–2000 and 1998–1999 and up slightly from 1997–1998.
- There has been almost no change in the number of students achieving below the provincial standard. In 2000–2001, 36% of students achieved Levels 1 and 2. A further 6% of students produced insufficient information to score.
- The exemption rate for Grade 3 writing in 2000–2001 was 5%. This is down slightly from 1999–2000 and consistent with the exemption rates in 1998–1999 and 1997–1998.

*Insufficient Information to Score
**Not Enough Evidence for Level 1
***Unless otherwise noted, all percentages are based on Method 1 reporting as described in the 2000–2001: Overall Achievement at a Glance section.

Overall Student Achievement — Grade 6 Writing, 1998–1999 to 2000–2001



Three-Year Trend in Grade 6 Writing:
Overall Achievement at Level 3 and Above

1998–1999	*1999–2000*	*2000–2001*
48%	48%	53%

Overall achievement in Grade 6 writing showed some improvement in 2000–2001, after remaining stable in 1998–1999 and 1999–2000.

- In 2000–2001, 53% of students achieved at or above the provincial standard (Level 3). This is up 5% from 1999–2000.
- The increase in the percentage of students achieving at the higher level, has resulted in a small decrease in the numbers of students achieving below the provincial standard. In 2000–2001, 39% of students achieved Levels 1 and 2. A further 5% of students produced insufficient information to score.
- The exemption rate for Grade 6 writing in 2000–2001 was 4%. This is down slightly from 1999–2000 and consistent with the exemption rate in 1998–1999.

*Insufficient Information to Score
**Not Enough Evidence for Level 1
***Unless otherwise noted, all percentages are based on Method 1 reporting as described in the 2000–2001: Overall Achievement at a Glance section.

Overall Achievement in Writing at Levels 3 and 4 by Subgroup, 2000–2001

	Grade 3		Grade 6	
Gender	Girls 58%	Boys 44%	Girls 63%	Boys 44%
Language	Non-ESL 53%	ESL 26%	Non-ESL 54%	ESL 21%
Special Education Support	Not Receiving Support 58%	Receiving Support 12%	Not Receiving Support 60%	Receiving Support 19%

In both grades, a higher percentage of girls than boys achieved Levels 3 and 4. This gap has remained constant since province-wide testing began. Non-ESL students achieved higher results than ESL students. Students not receiving special education support achieved higher results than students receiving special education support.

Students Who Received Any Accommodation(s) in Writing

	1997–1998	1998–1999	1999–2000	2000–2001
Grade 3	22%	29%	29%	19%
Grade 6	n/a	34%	17%	15%

*Student Achievement — Grade 3 Writing by Category, 2000–2001**

The following category results provide a detailed picture of how well students did on the writing components of the 2000–2001 assessment. Unlike the overall results, which are comparable from year to year, category results relate to tasks in a particular assessment and cannot be compared from year to year. Category results highlight those areas of the assessment in which students did well as well as those in which they had difficulty. Schools will find it useful to compare their category results from this year's assessment with their board's category results and the provincial category results below. School boards will find it useful to compare their category results with the provincial category results below.

Knowledge/Skills Categories	Exempt	No Data	IIS**	NE1***	Level 1	Level 2	Level 3	Level 4
Reasoning: Understands the purpose of the writing task, develops ideas and relates them to the purpose of the task and to each other								
Method 1	5	1	3	0	9	52	27	4
Method 2	N/A	N/A	3	0	9	55	29	4
Communication: Uses appropriate writing techniques, including vocabulary, imagery and sentence variety to create a tone (i.e., the writer's voice) and writes for a specific audience								
Method 1	5	1	3	0	8	45	33	6
Method 2	N/A	N/A	3	0	8	48	35	7
Organization of Ideas: Shows evidence of a logical plan and/or focus, and presents connected ideas								
Method 1	5	1	3	0	10	50	28	4
Method 2	N/A	N/A	3	0	10	54	29	4
Application of Language Conventions: Applies language conventions correctly (spelling, grammar, punctuation, etc.)								
Method 1	5	1	3	0	9	39	37	7
Method 2	N/A	N/A	3	0	10	41	39	7

*Category scores are not adjusted for year-to-year differences in assessments.
**IIS = Insufficient Information to Score
***NE1 = Not Enough Evidence for Level 1

*Student Achievement — Grade 6 Writing by Category, 2000–2001**

The following category results provide a detailed picture of how well students did on the writing components of the 2000–2001 assessment. Unlike the overall results, which are comparable from year to year, category results relate to tasks in a particular assessment and cannot be compared from year to year. Category results highlight those areas of the assessment in which students did well as well as those in which they had difficulty. Schools will find it useful to compare their category results with their board's category results and the provincial category results below. School boards will find it useful to compare their category results with the provincial category results below.

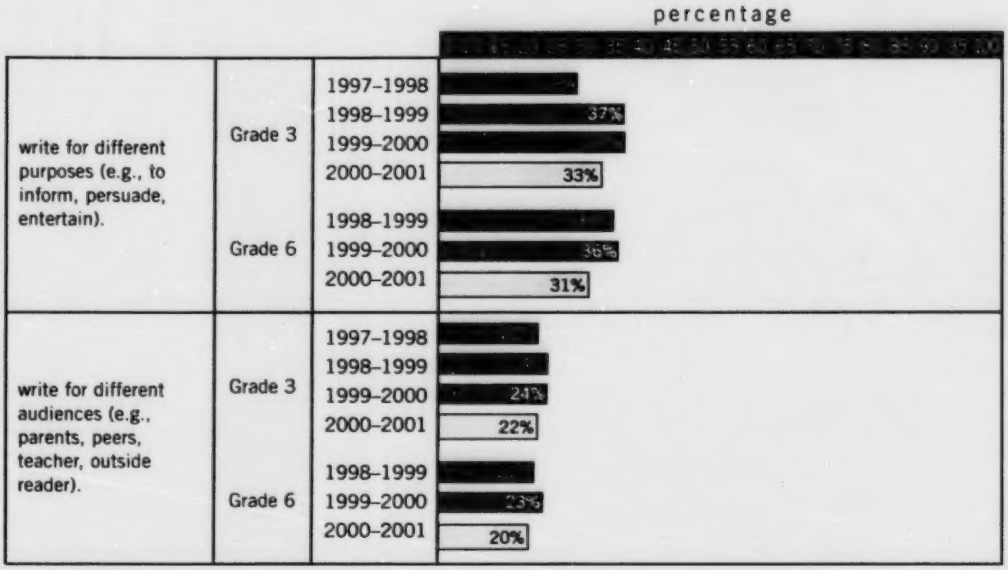
Knowledge/Skills Categories	Exempt	No Data	IIS**	NE1***	Level 1	Level 2	Level 3	Level 4
Reasoning: Understands the purpose of the writing task, develops ideas and relates them to the purpose of the task and to each other								
Method 1	4	< 1	3	0	9	50	30	4
Method 2	N/A	N/A	3	0	4	44	43	4
Communication: Uses appropriate writing techniques, including vocabulary, imagery and sentence variety to create a tone (i.e., the writer's voice) appropriate for a specific audience								
Method 1	4	1	3	0	7	43	35	8
Method 2	N/A	N/A	3	0	8	45	37	8
Organization of Ideas: Organizes ideas and information logically in sentences, in paragraphs and within the overall organization								
Method 1	4	1	3	0	9	45	33	5
Method 2	N/A	N/A	3	0	9	47	35	5
Application of Language Conventions: Applies language conventions (spelling, grammar, punctuation, etc.) correctly								
Method 1	4	1	3	0	8	37	40	8
Method 2	N/A	N/A	3	0	9	38	42	8

*Category scores are not adjusted for year-to-year differences in assessments.
**IIS = Insufficient Information to Score
***NE1 = Not Enough Evidence for Level 1

Relevant Findings from the Teacher Questionnaire

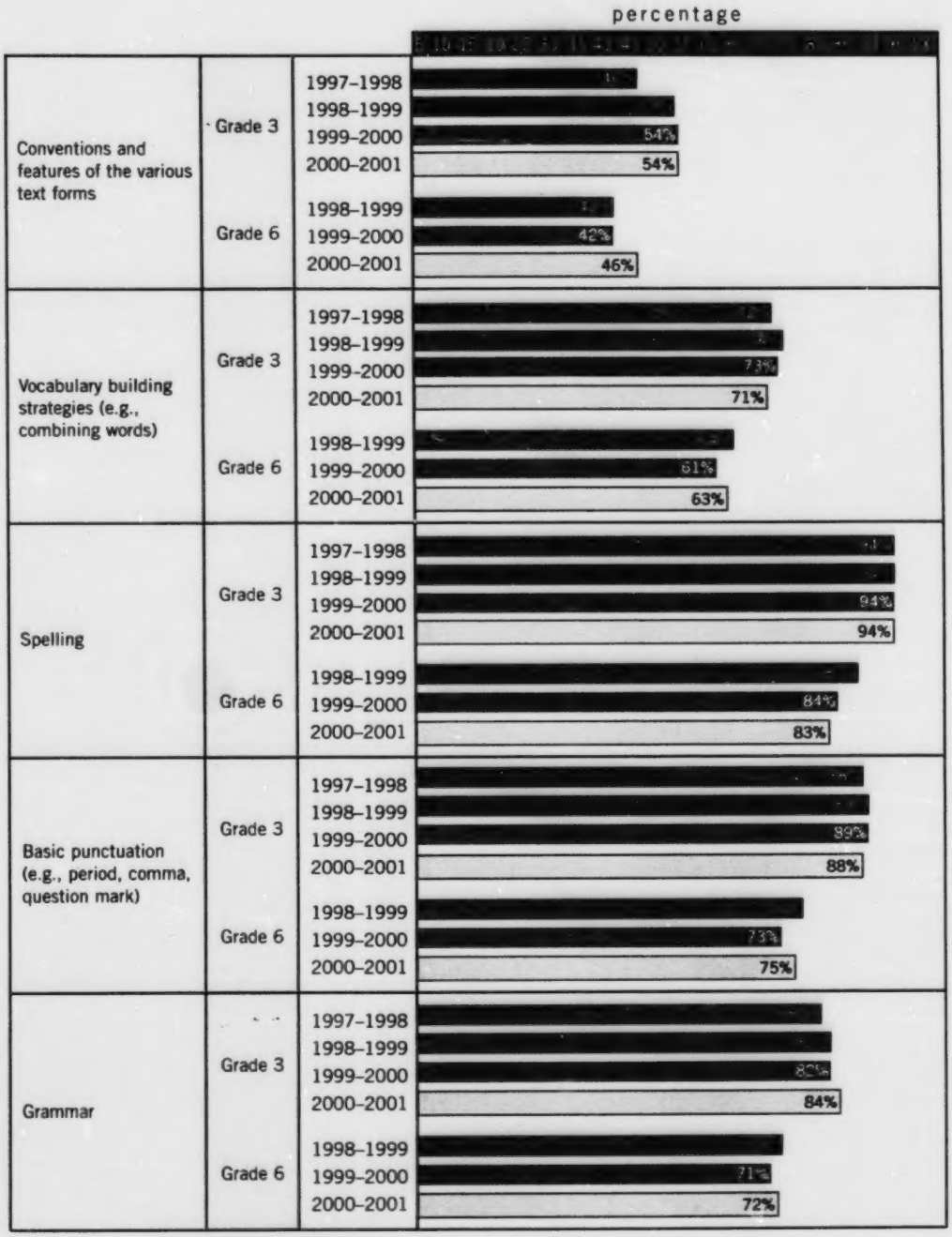
Writing for Different Purposes and Audiences

*Teachers who indicate that **at least a few times a week** they have their students*



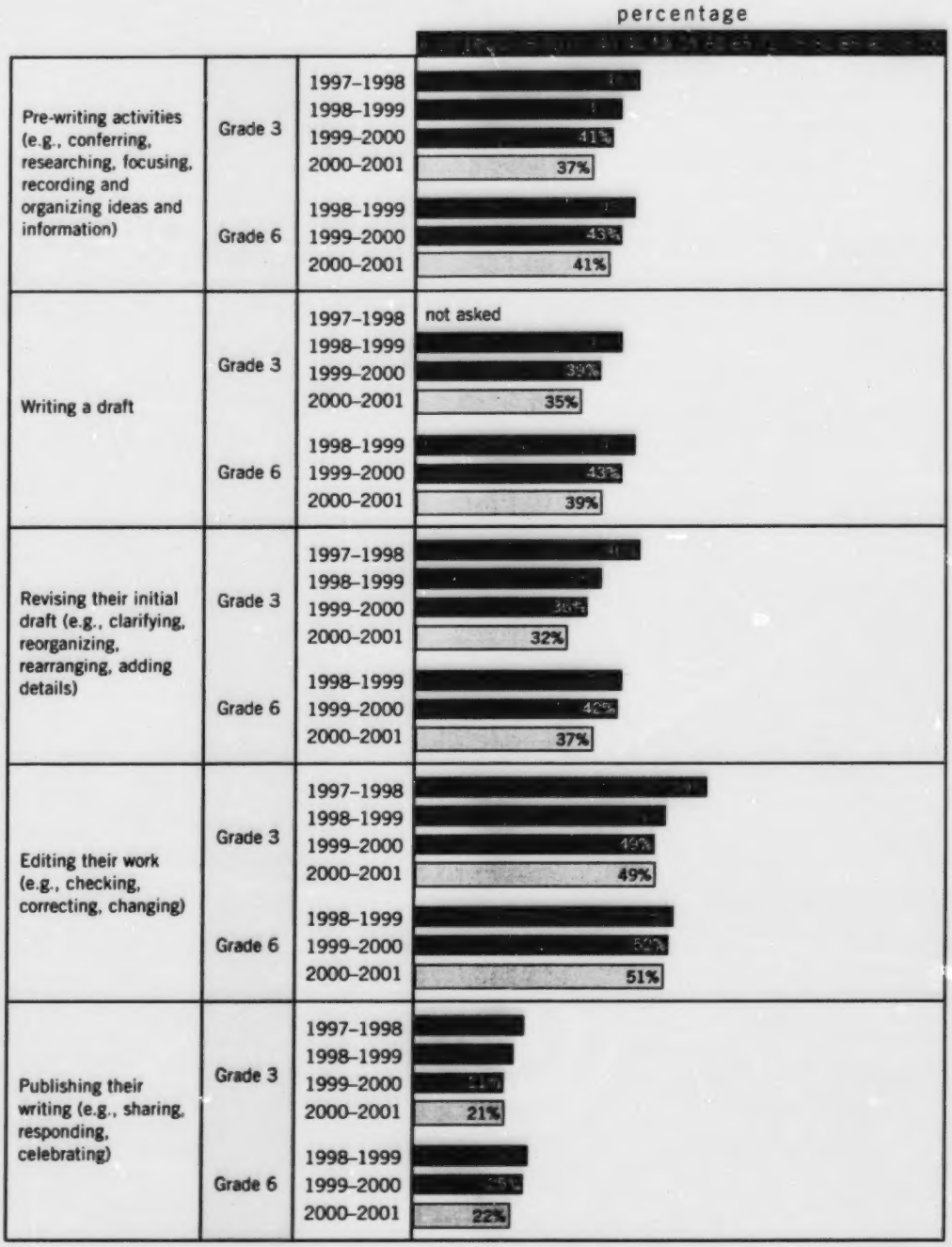
Teaching Key Writing Strategies

*Teachers who indicate that **at least a few times a week** they teach their students*



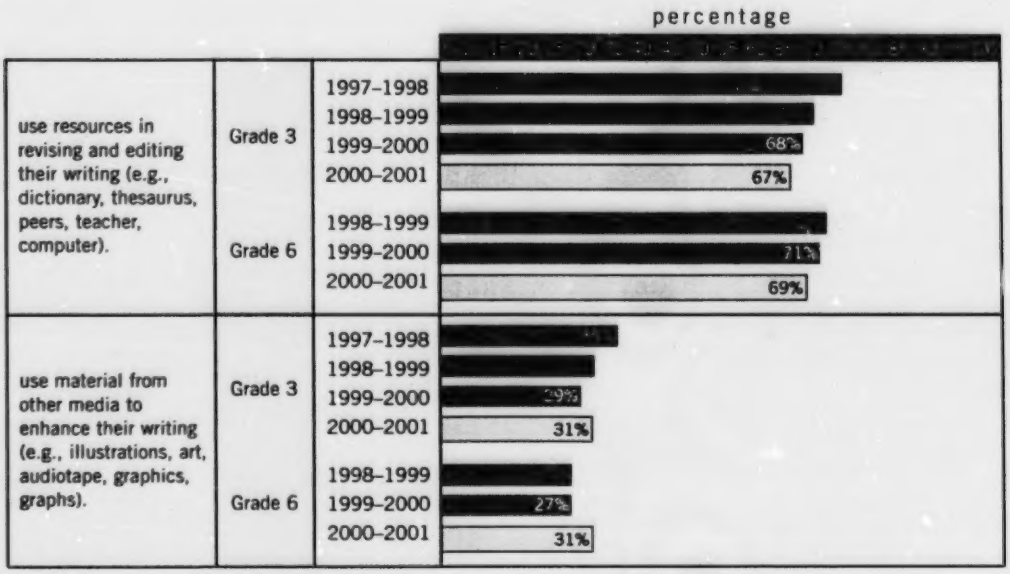
Using Writing Strategies (the Writing Process)

*Teachers who indicate that **at least a few times a week** they have their students use the following stages of the writing process:*



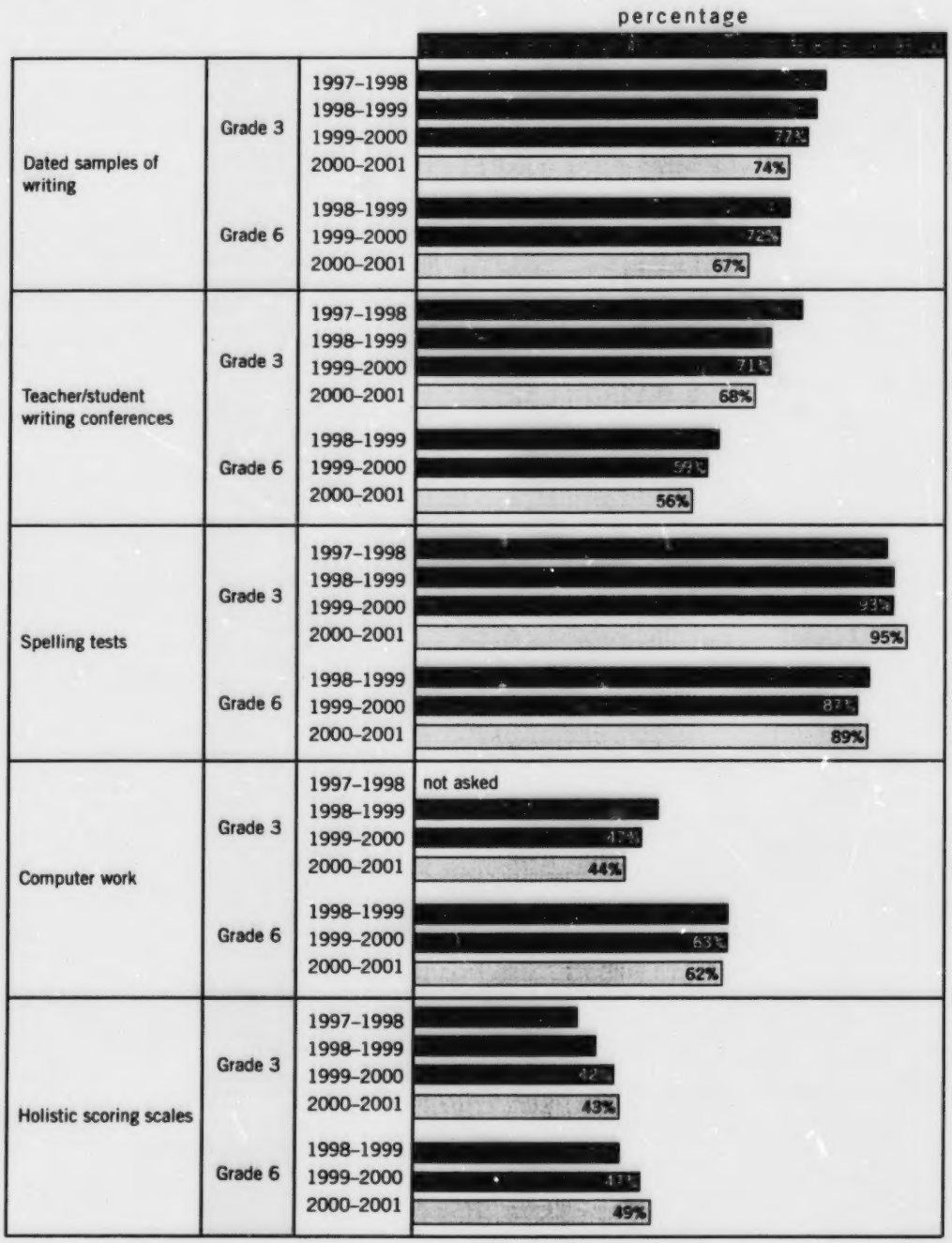
Using Resources and Materials

*Teachers who indicate that **at least a few times a week** they have their students*



Assessing Writing

*Teachers who indicate that **at least a few times a month** they use the following materials and strategies in assessing their students' progress in writing:*



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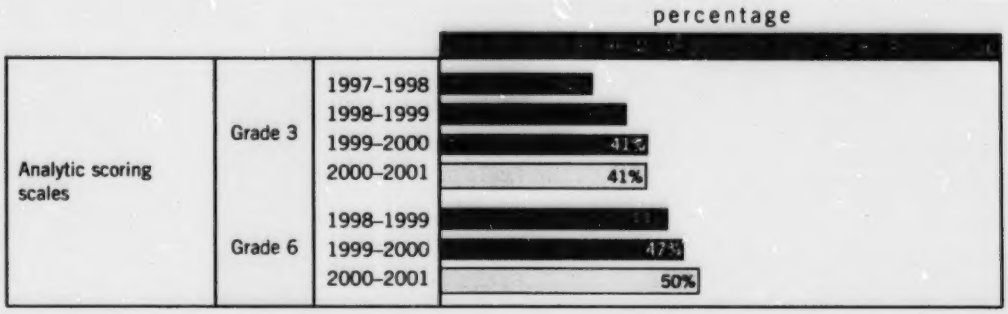
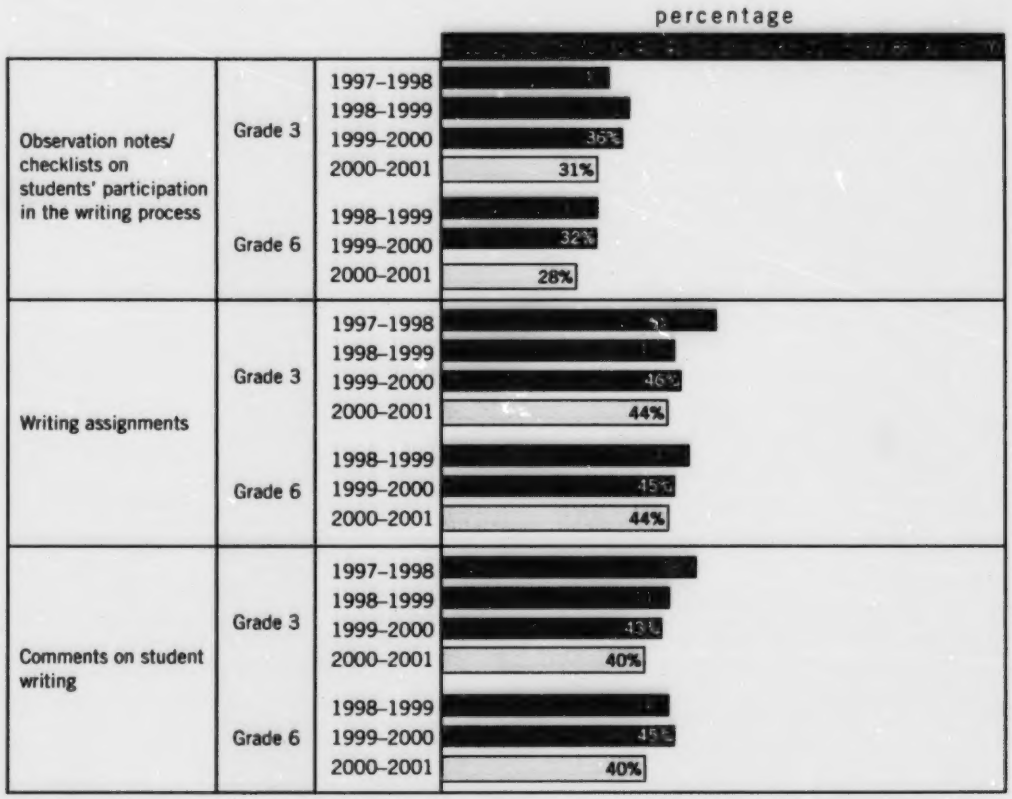
Assessing Writing

*Teachers who indicate that **at least a few times a month** they use the following materials and strategies in assessing their students' progress in writing (continued):*

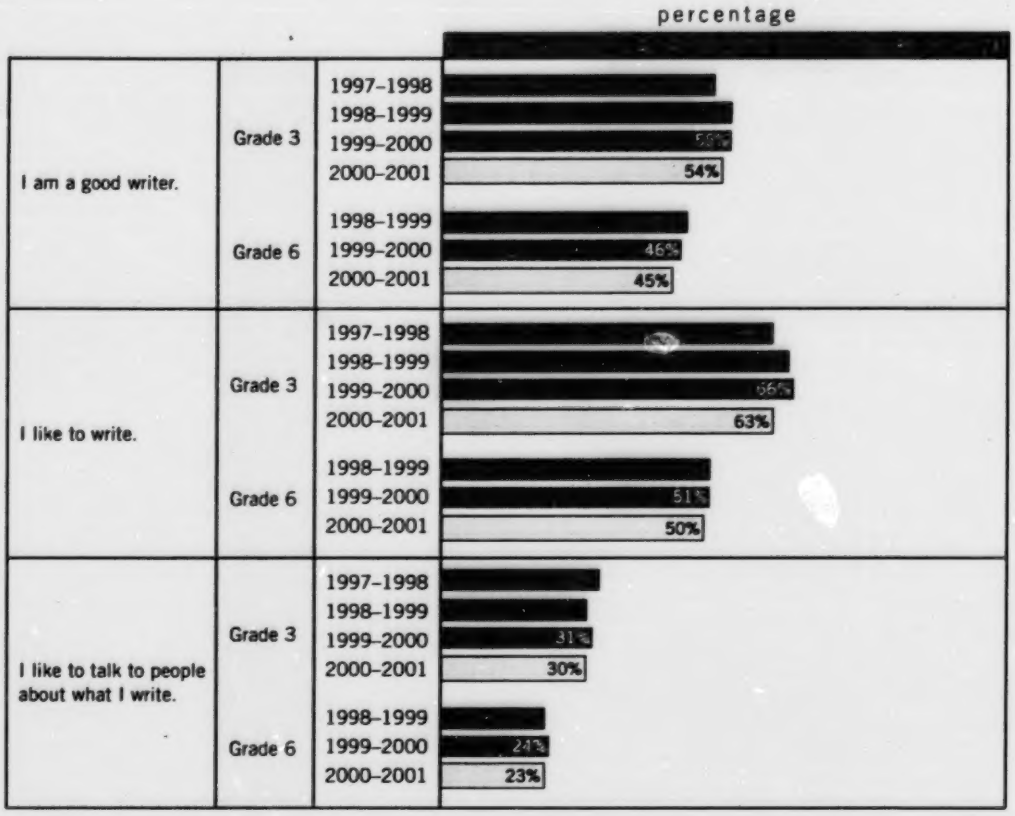


*Teachers who indicate that **at least a few times a week** they use the following materials and strategies in assessing their students' progress in writing:*



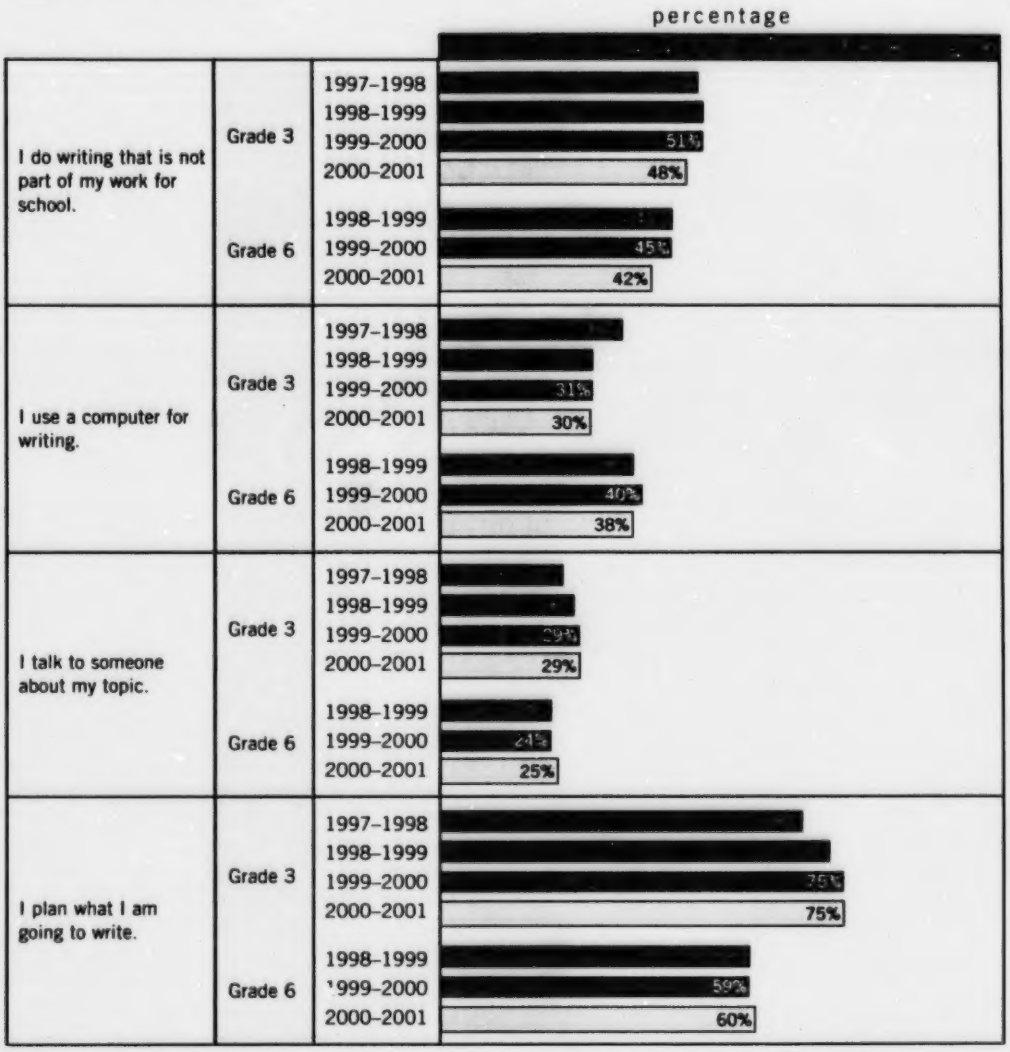
Relevant Findings from the Student Questionnaire

Student Attitudes Toward Writing



There are persistent gender differences in student attitudes in both grades. In Grade 3, the percentage of girls indicating they are good writers is 9 percentage points higher than boys and in Grade 6, 8 percentage points higher. In Grade 3, the percentage of girls indicating they like to write is 14 percentage points higher and in Grade 6, 17 percentage points higher. The percentage of girls indicating that they like to talk to people about what they write is the same as for boys in Grade 3 and 1 percentage point higher in Grade 6.

Student Writing Habits



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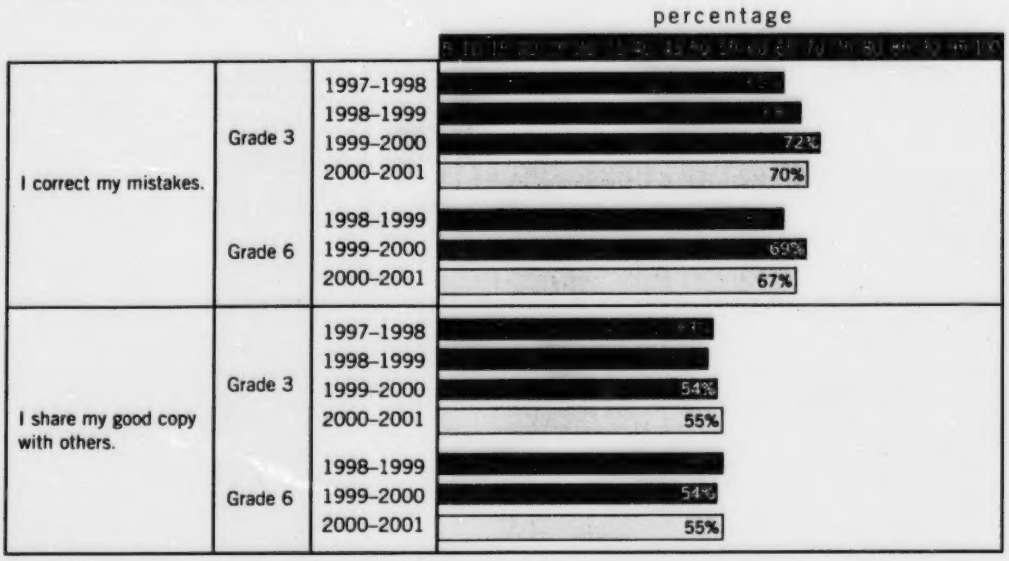
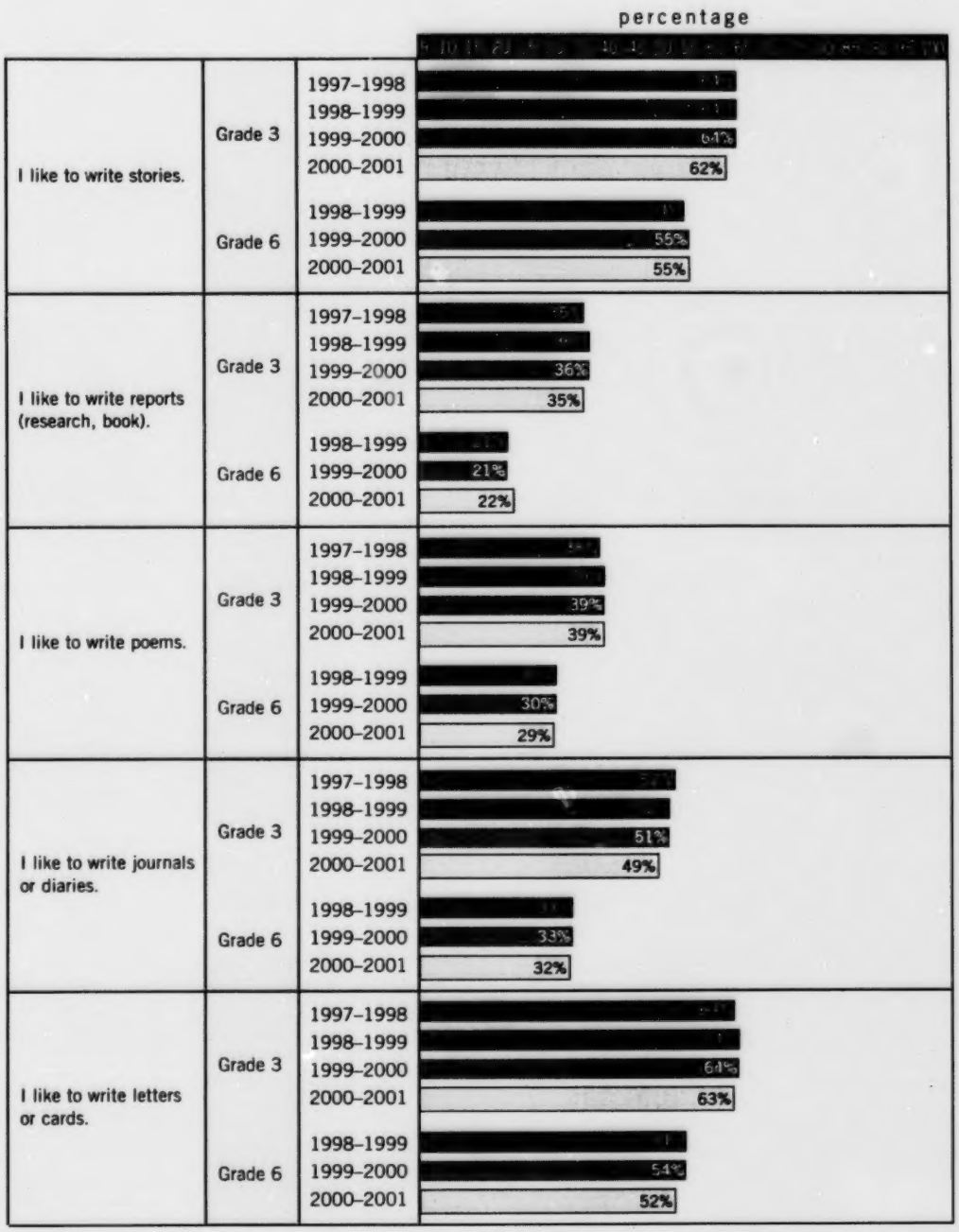
Student Writing Habits (continued)



There are some large and persistent gender differences in student writing habits in both grades. The proportion of Grade 3 and Grade 6 girls who indicate they do writing that is not part of their school work is 13 and 15 percentage points higher than for boys in the respective grades. Similarly, the proportion of Grade 3 and Grade 6 girls who indicate that they correct their mistakes is respectively 8 and 15 percentage points higher than boys. Girls in both grades are much more likely to share their good copy with others. A slightly higher percentage of Grade 3 and Grade 6 boys indicate they use a computer for writing. The percentages of girls and boys who indicate they talk to someone about their topic or plan what they are going to write are similar in both grades.

Student Writing Preferences

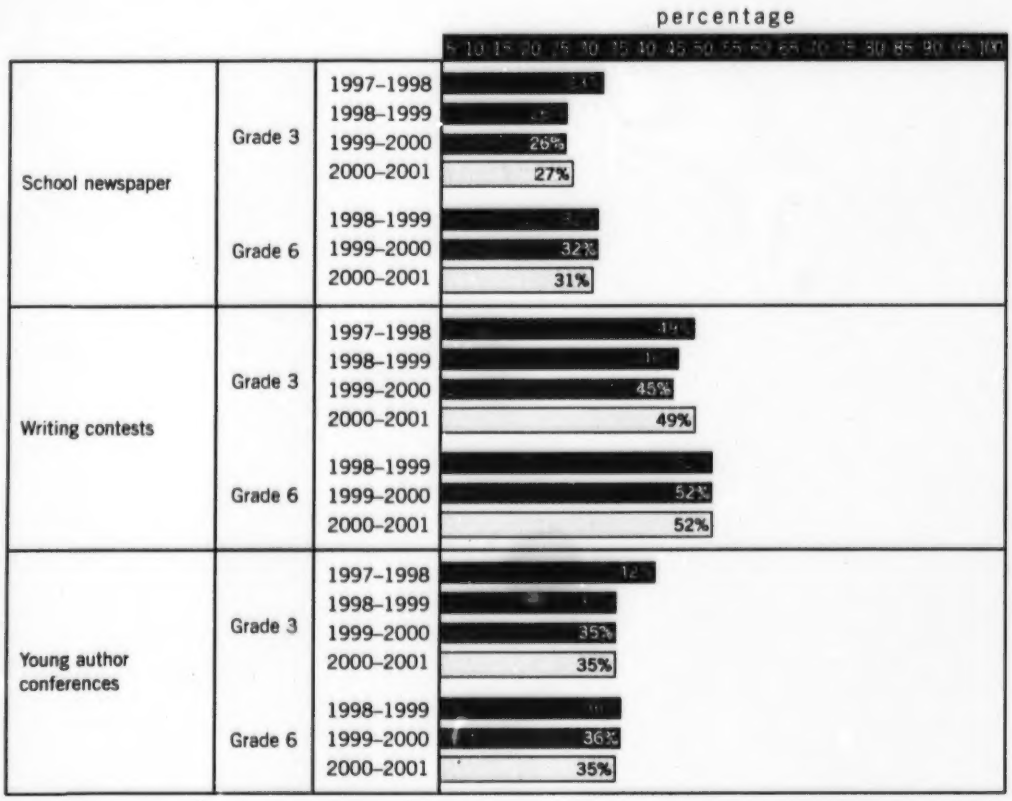


There are some substantial and persistent gender differences in writing preferences in both grades. Forty-nine percent of Grade 3 girls and 39% of Grade 6 girls indicate that they like to write poems compared with 29% of Grade 3 boys and 19% of Grade 6 boys. The gap is even larger for writing journals and diaries. Sixty-six percent of Grade 3 girls and 53% of Grade 6 girls indicate they like to write journals and diaries compared with only 34% and 12% respectively of boys in those grades. Gender differences in percentages liking to write stories and reports are consistent but not as marked.

Relevant Findings from the Principal Questionnaire

Schoolwide Writing Opportunities

Principals who indicate that their school has provided the following opportunities for students:



Observations and Suggestions from Trained Teacher Markers at the Marking Sites

At the end of the marking period, the trained teacher markers were asked to synthesize their observations about the student work they had been marking over the two-week period and to provide suggestions to teachers for enhancing and improving student learning. Markers for each subject provided both general and specific observations and suggestions. There is considerable similarity between the observations and suggestions made by Grade 3 and Grade 6 teacher markers this year and the observations and suggestions made by teacher markers last year.

WRITING

Grade 3 and Grade 6

General Observations and Suggestions

- Students are having difficulty fully understanding and interpreting the purpose of the writing tasks. Teachers need to provide opportunities for students to examine and analyze the demands of various types of writing prompts so that students can respond more clearly and more fully.

- Student need to be more aware of the demands and conventions of different types or forms of writing. Teachers need to ensure that students have multiple opportunities to respond to a variety of writing tasks, particularly non-fiction tasks, appropriate for the grade level.

- Students need to spend more time revising and editing their writing. Teachers need to focus on revising and editing skills, particularly on having students apply these skills under the conditions imposed by timed writing.

Specific Observations and Suggestions by Category: Grade 3

In the Reasoning category, most students begin strongly but have difficulty staying on task in their writing. Teachers need to focus on having students

- develop more complexity in their critical and creative thinking, particularly with respect to cause and effect relationships and the in-depth development of plot and ideas; and
- examine the details they include in their writing in order to ensure that the details are relevant to the task, sufficient to support ideas and not repetitive.

In the Communication category, most students' writing now demonstrates some sense of voice and audience and a fairly wide vocabulary, but teachers need to focus on having students

- use more descriptive adjectives and adverbs and begin to use imagery in their writing;
- use more sentence variety in their writing; and
- draw on their own experiences more in their writing.

In the Organization of Ideas category, most students' writing demonstrates generally good organization and sequencing, but teachers need to focus on having students

- plan their writing in order to ensure that all three key elements are present and in-balance — a beginning, middle and end — and that these elements are all tied together;
- use more complex linking words, i.e., ones other than "then," "but," and "so," between sentences to connect ideas; and
- develop and resolve the conflict they write about in their stories.

In the Application of Language Conventions category, most students are able to identify vowel sounds and simple punctuation marks, but teachers need to focus on having them

- identify the parts of speech and understand their functions; and
- work on syllabication of words in context rather than of words in isolation.

Specific Observations by Category: Grade 6

In the Reasoning category, students are able to make some inferences and to draw conclusions, particularly in fiction, but teachers need to focus on having them

- understand clearly the distinction between and among such concepts as "main idea," "theme," "summary," and "plot";
- connect evidence clearly to the text; and
- be more precise in their thinking (more emphasis on quality rather than quantity in their responses).

In the Communication category, students' writing demonstrates a strong vocabulary and sense of voice, but teachers need to focus on having them

- learn synonyms for "said";
- use more imagery — similes and metaphors;
- understand the difference between using first, second and third person in their writing and the need for consistency in their viewpoint; and
- become more consistently aware of communicating with their audience.

In the Organization of Ideas category, students' writing demonstrates a good sense of logical organization, with beginnings, middles and ends, but teachers need to focus on having students

- balance their writing, with more emphasis on the body and conclusion;
- develop appropriate paragraph structures; and
- use a variety of logical linkages and transitions between paragraphs, for example, words and expressions such as "meanwhile," "since," and "as a result."

In the Application of Language Conventions category, students' writing demonstrates generally good spelling, but teachers need to focus on having them

- punctuate and structure dialogue;
- understand the difference between the spellings of common contractions, homonyms and homophones, for example, "it's" and "its," "your" and "you're," "there," and "their" and "to" and "too"; and
- use verb tenses and verb sequences correctly.

Specific Recommendations for Writing

Writing is an integrated activity that combines knowledge and skills in the four writing categories. The writer develops ideas and information for specific purposes and communicates them to specific audiences. Effective writing requires the student to use an appropriate form and organizational structure, a variety of suitable writing techniques and correct language conventions.

The following recommendations are based on

- the 2000–2001 overall and category-specific student achievement results;
- the patterns and trends emerging the from overall results year to year;
- the patterns in the data collected through the various questionnaires year to year; and
- the suggestions from the trained teacher markers at the EQAO writing marking centres.

The recommendations are not new; rather, because there has been little change in the achievement and questionnaire data, these recommendations reiterate EQAO's recommendations from the 1999–2000 *Provincial Report.* It is critical that principals, teachers, and parents examine these recommendations in light of their school's action plan to ensure that these recommendations are being addressed in a systematic and focused way.

EQAO recommends that

1. Teachers focus their writing instruction and assessment more specifically on the overall and specific expectations for the grade they are teaching, while at the same time ensuring that they are implementing the writing skills development continuum described in *The Ontario Curriculum, Grades 1–8* and teaching the stages of the writing process.

2. Teachers provide students with multiple and regular opportunities to express their ideas clearly (Reasoning), developing skill in focusing on the purpose of the writing task, in maintaining focus on the purpose, and in developing ideas and relating them to the purpose and the ideas to each other. For example, have students
   - show that they understand the topic and
   - stay on topic throughout the writing.

3. Teachers provide students with multiple and regular opportunities to communicate clearly (Communication), developing skill in using writing techniques and style appropriate to the purpose and the intended audience. For example, have students use
   - appropriate and varied sentences;
   - appropriate imagery;
   - appropriate and correct vocabulary; and
   - an appropriate voice.

4. Teachers provide students with multiple and regular opportunities to organize their writing clearly (Organization of Ideas), developing skill in using appropriate organizers (both visual and written) for different kinds of writing. For example, have students
   - use appropriate words to connect ideas;
   - organize sentences into a paragraph and, in junior grades, link paragraphs in longer stories and information pieces; and
   - use appropriate visual effects such as underlining, colour, pictures and graphs.

5. Teachers ensure students are able to use the writing conventions for their grade levels correctly (Application of Language Conventions). For example, have students correctly use
   - the exclamation mark and subject–verb agreement in Grade 3 and
   - the colon and subordinate clauses in Grade 6.

6. Teachers provide students with more frequent opportunities to write for a wide variety of purposes and audiences appropriate to their interests and stages of development and to their writing needs.

7. Teachers focus on the stages of the writing process, particularly on the pre-writing and planning stages, which provide students with opportunities to talk about and organize their ideas before writing their initial drafts.

8. Teachers teach students how to revise and edit their writing, with particular emphasis on doing this independently.

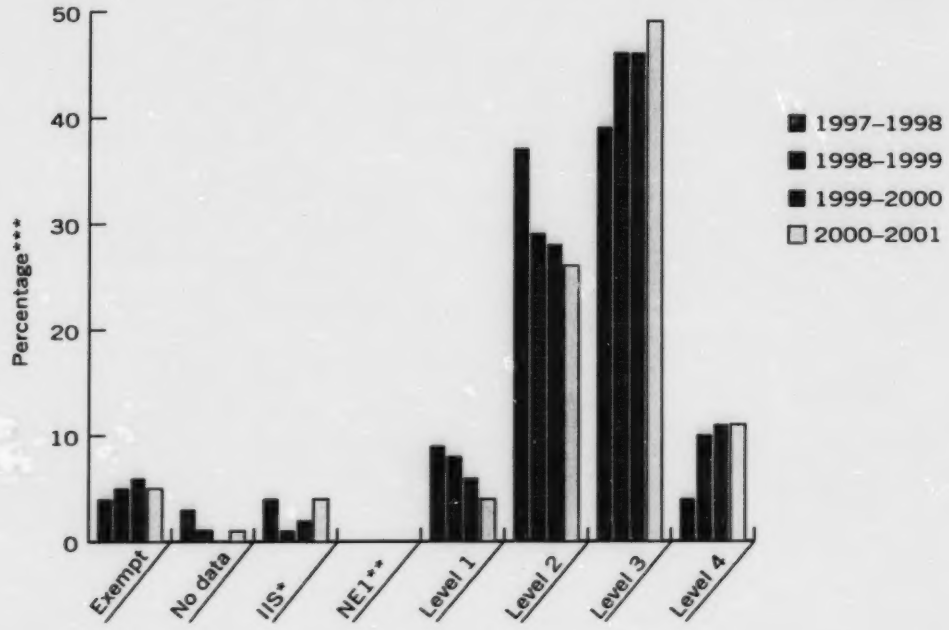
9. Teachers have students display, read aloud, discuss and find various other ways of "publishing" their writing to help them become more confident writers.

10. Teachers, working with principals, parents, school improvement planning committees and school councils, provide more opportunities for students to do more writing beyond school-assigned writing, and to "celebrate" and "publish" their writing.

11. That teachers, working with principals, recognize the cross-curricular nature of their writing programs by embedding instruction in writing and writing-process skills in writing activities in all subjects.

Results, Analysis and Recommendations for Mathematics

Overall Student Achievement — Grade 3 Mathematics, 1997–1998 to 2000–2001



Four-Year Trend in Grade 3 Mathematics:
Overall Achievement at Level 3 and Above

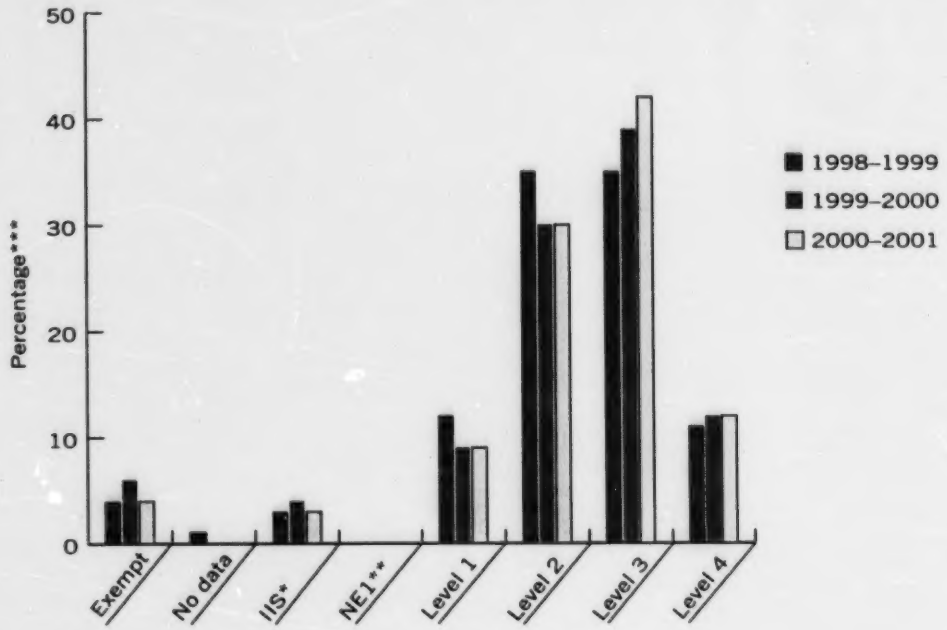
1997–1998	*1998–1999*	*1999–2000*	*2000–2001*
43%	56%	57%	61%

Overall achievement in Grade 3 mathematics has shown significant improvement over the past four years:

- **In 2000–2001, 60% of students achieved at or above the provincial standard (Level 3). This is up 17% from 1997–1998.**
- **The increase in the percentage of students achieving at the higher levels has resulted in a decrease in the number of students achieving below the provincial standard. In 2000–2001, 30% of students achieved Levels 1 and 2. A further 4% of students produced insufficient information to score.**
- **The exemption rate for Grade 3 mathematics in 2000–2001 was 5%. This is consistent with the exemption rates in 1999–2000, 1998–1999 and 1997–1998.**

*Insufficient Information to Score
**Not Enough Evidence for Level 1
***Unless otherwise noted, all percentages are based on Method 1 reporting as described in the Results Summary section.

Overall Student Achievement — Grade 6 Mathematics, 1998–1999 to 2000–2001



Three-Year Trend in Grade 6 Mathematics: Overall Achievement at Level 3 and Above

1998–1999	*1999–2000*	*2000–2001*
46%	51%	54%

Overall achievement in Grade 6 mathematics has shown significant improvement over the past three years:

- **In 2000–2001, 54% of students achieved at or above the provincial standard (Level 3). This is up 8% from 1998–1999.**
- **The increase in the percentage of students achieving at the higher levels has resulted in a gradual decrease in the number of students achieving below the provincial standard. In 2000–2001, 40% of students achieved Levels 1 and 2. A further 3% of students produced insufficient information to score.**
- **The exemption rate for Grade 6 mathematics in 2000–2001 was 4%. This is down slightly from 1999–2000 and consistent with the exemption rate in 1999–2000.**

*Insufficient Information to Score
**Not Enough Evidence for Level 1
***Unless otherwise noted, all percentages are based on Method 1 reporting as described in the Results Summary section.

Overall Achievement in Mathematics at Levels 3 and 4 by Subgroup, 2000–2001

	Grade 3		Grade 6	
Gender	Girls 62%	Boys 60%	Girls 56%	Boys 53%
Language	Non-ESL 61%	ESL 40%	Non-ESL 55%	ESL 37%
Special Education Support	Not Receiving Support 67%	Receiving Support 25%	Not Receiving Support 61%	Receiving Support 23%

In both grades, a higher percentage of girls than boys achieved Levels 3 and 4. This gap has remained constant since province-wide testing began. More non-ESL students than ESL students achieved higher results. Students not receiving special education support achieved higher results than students receiving special education support.

Students Who Received Any Accommodations in Mathematics

	1997–1998	1998–1999	1999–2000	2000–2001
Grade 3	22%	38%	31%	22%
Grade 6	n/a	28%	21%	17%

*Student Achievement — Grade 3 Mathematics by Category, 2000–2001**

The following category results provide a detailed picture of how well students did on the mathematics components of the 2000–2001 assessment. Unlike the overall results, which are comparable from year to year, category results relate to questions and tasks in a particular assessment and cannot be compared from year to year. Category results highlight those areas of the assessment where students did well as well as those where they had difficulty. Schools will find it useful to compare their category results with their board's category results and with the provincial category results below. School boards will find it useful to compare their category results with the provincial category results below.

Knowledge/Skills Categories	Exempt	No Data	IIS**	NE1***	Level 1	Level 2	Level 3	Level 4
Problem Solving: Chooses and carries out strategies and applies them correctly								
Method 1	5	1	3	< 1	20	44	25	3
Method 2	N/A	N/A	3	< 1	21	46	27	3
Understanding of Concepts: Uses and explains required concepts and incorporates mathematical ideas and relationships								
Method 1	5	1	2	< 1	14	43	32	3
Method 2	N/A	N/A	2	< 1	15	45	34	3
Application of Mathematical Procedures: Selects and accurately applies procedures (e.g., making a graph) and operations (e.g., adding and multiplying)								
Method 1	5	1	1	< 1	17	45	28	3
Method 2	N/A	N/A	1	< 1	18	48	30	3
Communication of Required Knowledge: Uses clear explanations and correct mathematical terms and symbols; justifies reasonableness of solutions								
Method 1	5	1	1	<1	19	43	26	3
Method 2	N/A	N/A	3	< 1	20	46	28	3

*Category scores are not adjusted for year-to-year differences in assessments.
**IIS = Insufficient Information to Score
***NE1 = Not Enough Evidence for Level 1

*Student Achievement — Grade 6 Mathematics by Category, 2000–2001**

The following category results provide a detailed picture of how well students did on the mathematics components of the 2000–2001 assessment. Unlike the overall results, which are comparable from year to year, category results relate to questions and tasks in a particular assessment and cannot be compared from year to year. Category results highlight those areas of the assessment where students did well as well as those where they had difficulty. Schools will find it useful to compare their category results from this year's assessment with their board's category results and with the provincial category results below. School boards will find it useful to compare their category results with the provincial category results below.

Knowledge/Skills Categories	Exempt	No Data	IIS**	NET***	Level 1	Level 2	Level 3	Level 4
Problem Solving: Analyzes and uses appropriate strategies that lead to accurate solutions								
Method 1	4	1	2	< 1	15	42	32	4
Method 2	N/A	N/A	2	< 1	16	44	34	5
Understanding of Concepts: Uses and explains required concepts and incorporates mathematical ideas and relationships								
Method 1	4	1	2	< 1	10	37	41	6
Method 2	N/A	N/A	2	< 1	11	38	43	6
Application of Mathematical Procedures: Selects and accurately applies procedures (e.g., making a graph) and operations (e.g., adding and multiplying)								
Method 1	4	1	2	< 1	12	45	32	5
Method 2	N/A	N/A	2	< 1	12	47	34	5
Communication of Required Knowledge: Uses clear explanations and appropriate mathematical language, analyzes the reasonableness of solutions and gives clear and precise justifications								
Method 1	4	1	3	< 1	16	44	29	4
Method 2	N/A	N/A	4	< 1	16	46	30	4

*Category scores are not adjusted for year-to-year differences in assessments.
**IIS = Insufficient Information to Score
***NE1 = Not Enough Evidence for Level 1

*Student Achievement — Grade 3 Mathematics by Strand, 2000–2001**

The following strand results provide a detailed picture of how well students did on the mathematics components of the 2000–2001 assessment. Unlike the overall results, which are comparable from year to year, strand results relate to questions and tasks in a particular assessment and cannot be compared from year to year. Strand results highlight those areas of the assessment where students did well as well as those where they had difficulty. Schools will find it useful to compare their strand results with their board's strand results and with the provincial strand results below. School boards will find it useful to compare their strand results with the provincial strand results below.

Knowledge/Skills Strands	Exempt	No Data	IIS**	NE1***	Level 1	Level 2	Level 3	Level 4
Number Sense and Numeration: Adding, subtracting, multiplying and dividing whole numbers and using numbers to describe and represent relationships								
Method 1	5	1	2	< 1	14	34	41	4
Method 2	N/A	N/A	2	< 1	15	36	43	4
Geometry and Spatial Sense: Using and applying knowledge of spatial relationships to identify and describe characteristics of 2- and 3-dimensional figures								
Method 1	5	1	1	< 1	9	42	40	2
Method 2	N/A	N/A	1	< 1	9	45	42	2
Measurement: Estimating, measuring and recording using standard and non-standard units								
Method 1	5	1	2	< 1	22	38	30	2
Method 2	N/A	N/A	3	< 1	23	40	32	2
Patterning and Algebra: Identifying, extending and creating patterns with shapes and numbers								
Method 1	5	1	1	< 1	9	37	44	3
Method 2	N/A	N/A	1	< 1	10	40	46	3
Data Management and Probability: Using methods to gather, interpret, display and communicate information and predicting the likelihood of events								
Method 1	5	1	2	< 1	11	40	39	2
Method 2	N/A	N/A	2	< 1	12	43	42	2

*Strand scores are not adjusted for year-to-year differences in assessment.
**IIS = Insufficient Information to Score
***NE1 = Not Enough Evidence for Level 1

*Student Achievement — Grade 6 Mathematics by Strand, 2000–2001**

The following strand results provide a detailed picture of how well students did on the mathematics components of the 2000–2001 assessment. Unlike the overall results, which are comparable from year to year, strand results relate to questions and tasks in a particular assessment and cannot be compared from year to year. Strand results highlight those areas of the assessment where students did well as well as those where they had difficulty. Schools will find it useful to compare their strand results from this year's assessment with their board's strand results and with the provincial strand results below. School boards will find it useful to compare their strand results with the provincial strand results below.

Knowledge/Skills Strands	*Exempt*	*No Data*	*IIS***	*NE1****	*Level 1*	*Level 2*	*Level 3*	*Level 4*
Number Sense and Numeration: Adding, subtracting, multiplying and dividing numbers to describe and represent relationships								
Method 1	4	1	2	1	23	41	25	4
Method 2	N/A	N/A	2	1	24	43	26	4
Geometry and Spatial Sense: Using and applying knowledge of spatial relationships to identify, describe, compare, classify, and analyze geometric properties and relationships								
Method 1	4	1	1	< 1	13	44	36	2
Method 2	N/A	N/A	1	< 1	13	46	37	2
Measurement: Estimating, measuring, calculating, comparing and recording using standard units								
Method 1	4	1	2	< 1	19	42	28	4
Method 2	N/A	N/A	2	< 1	19	44	30	5
Patterning and Algebra: Identifying, extending, creating and analyzing patterns and justifying pattern rules								
Method 1	4	1	2	< 1	15	41	33	5
Method 2	N/A	N/A	2	< 1	15	43	34	5
Data Management and Probability: Using methods to gather, analyze, display and communicate information and examining probability concepts								
Method 1	4	1	2	1	21	43	26	3
Method 2	N/A	N/A	2	1	22	45	27	3

*Strand scores are not adjusted for year-to-year differences in assessment.
**IIS = Insufficient Information to Score
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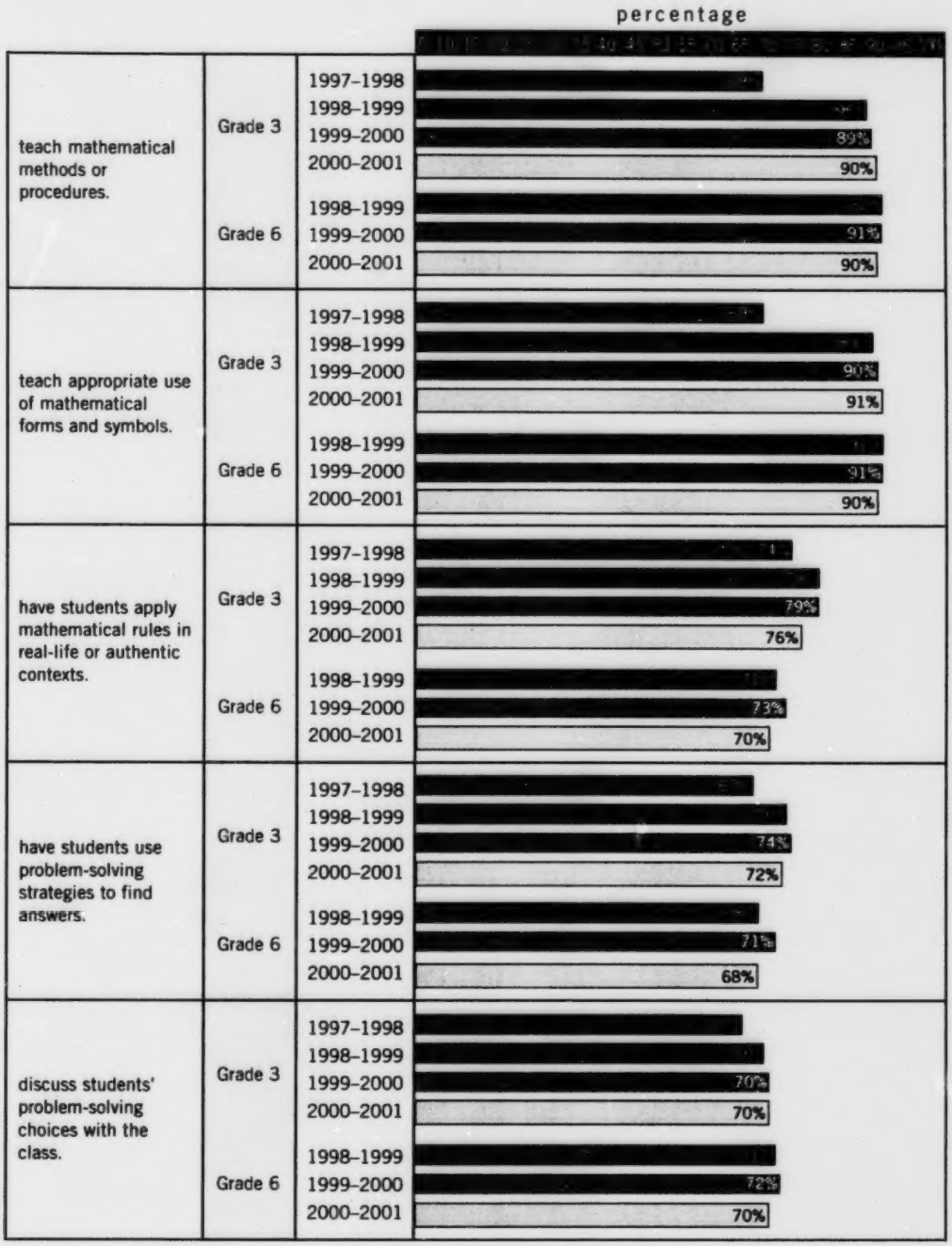
Relevant Findings from the Teacher Questionnaire

Teaching Strategies and Learning Activities

*Teachers who indicate that **at least a few times a week** they*



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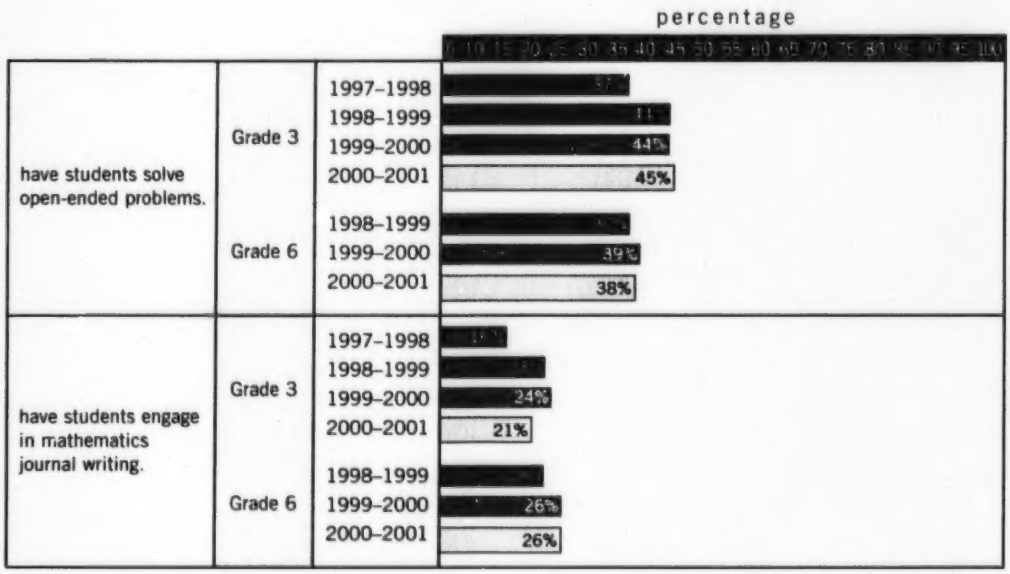
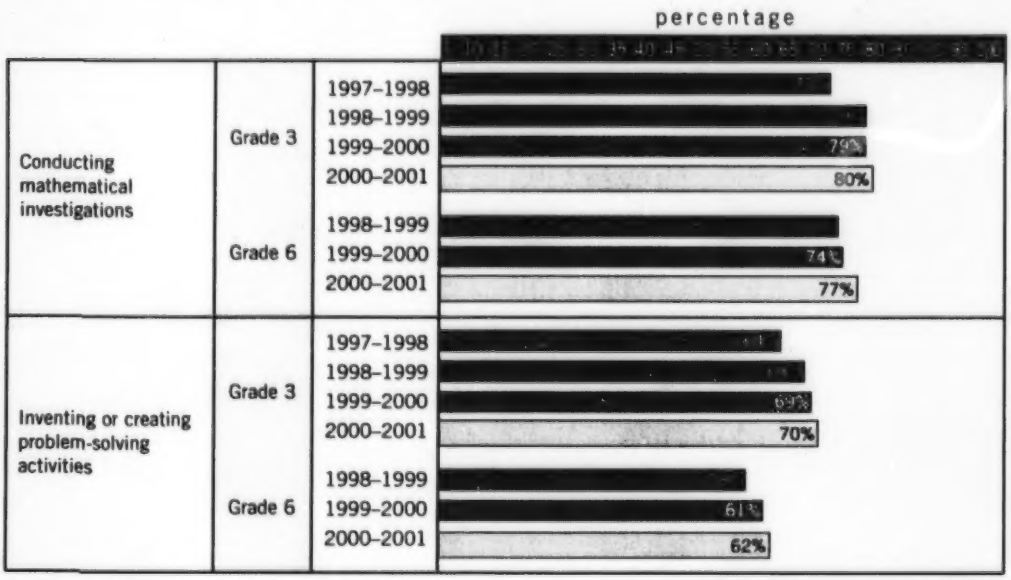
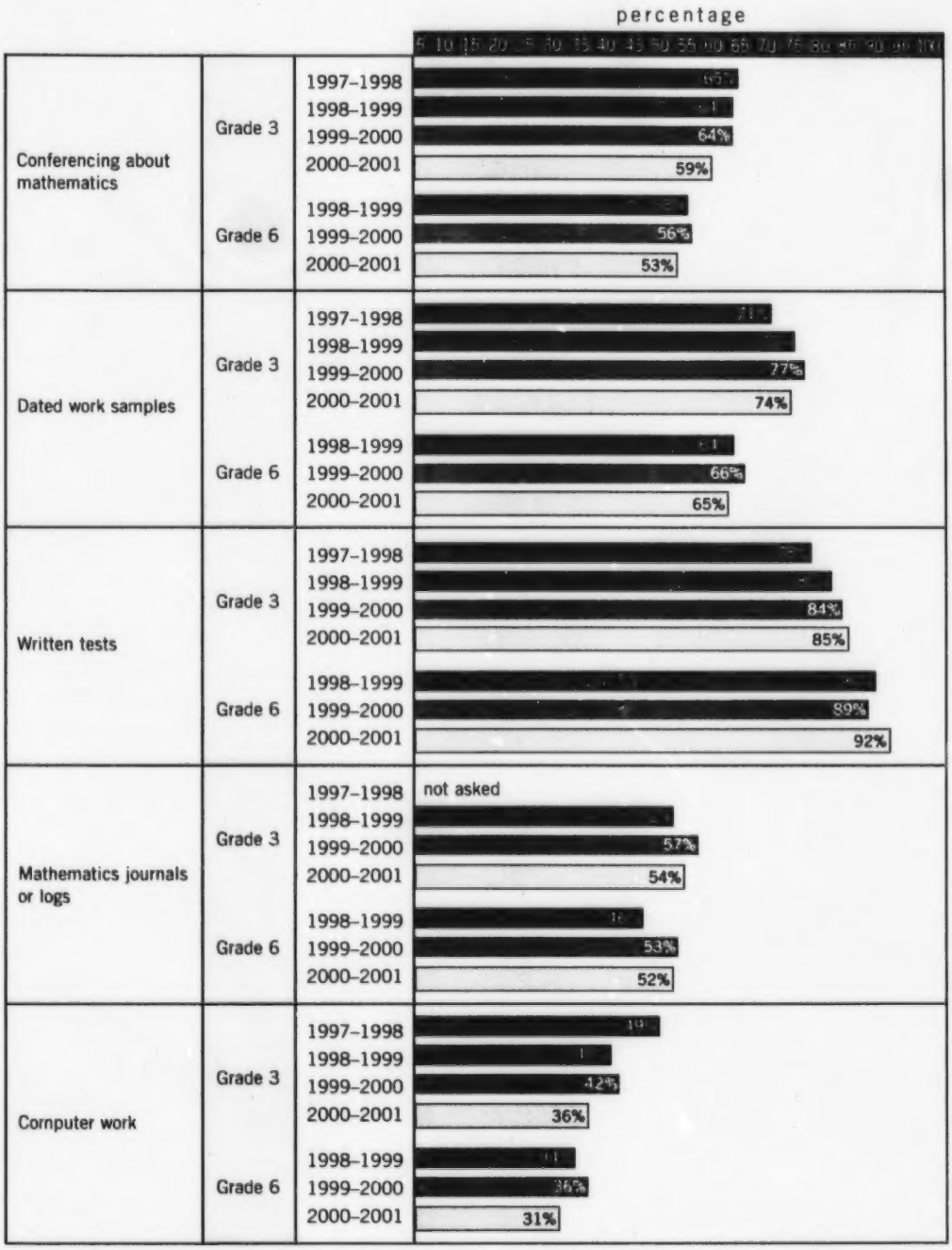
*Teachers who indicate that **at least a few times a week** they (continued)*



*Teachers who indicate that **at least a few times a month** they have their students engage in the following mathematics activities:*



*Teachers who indicate that **at least a few times a month** they use the following strategies in assessing their students' progress in mathematics:*



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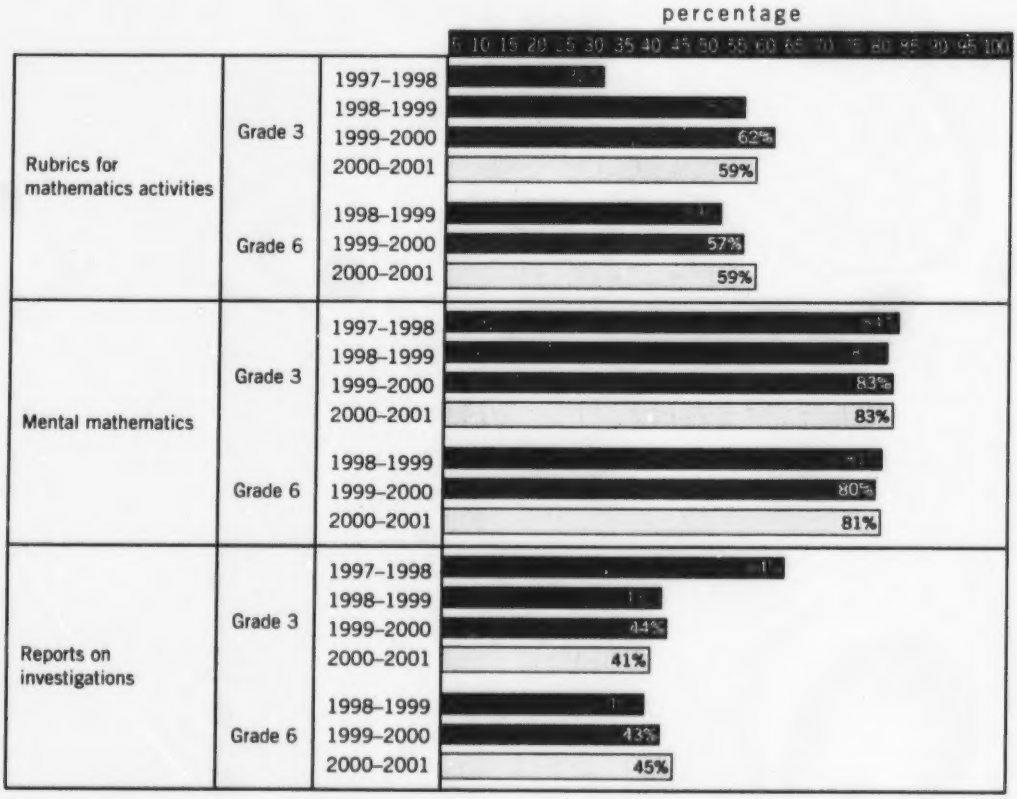
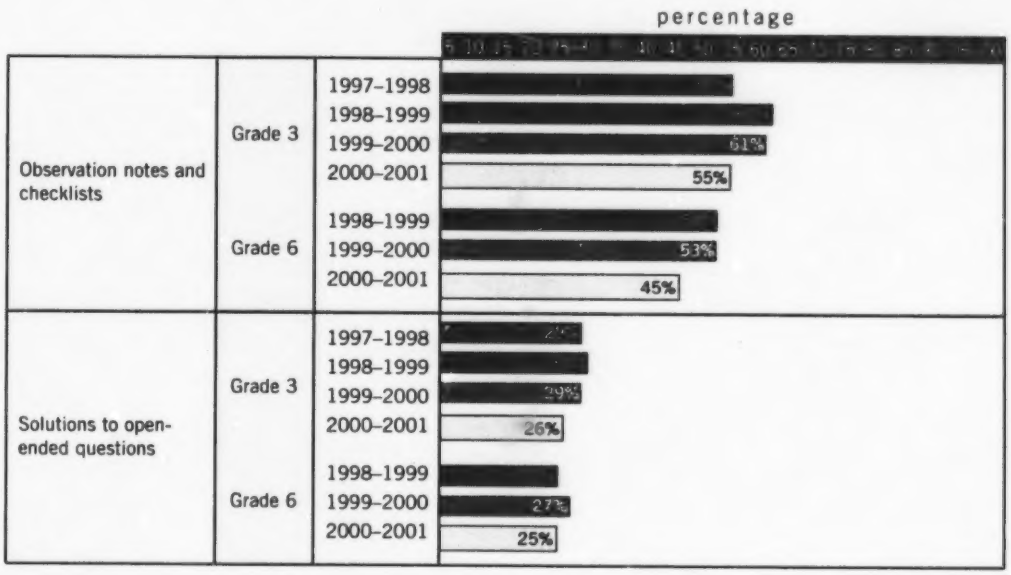
*Teachers who indicate that **at least a few times a month** they use the following strategies in assessing their students' progress in mathematics (continued):*



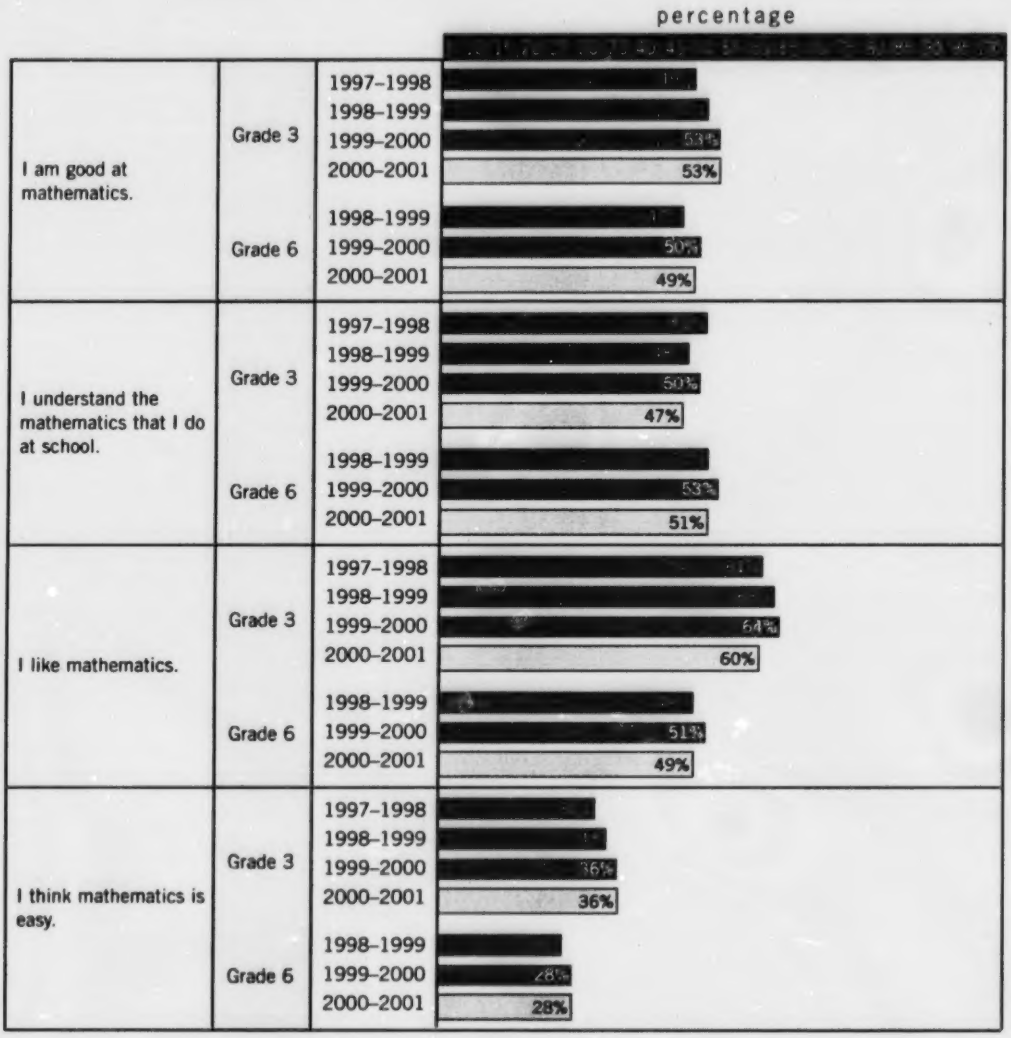
Assessing Mathematics

*Teachers who indicate that **at least a few times a week** they use the following strategies in assessing their students' progress in mathematics:*



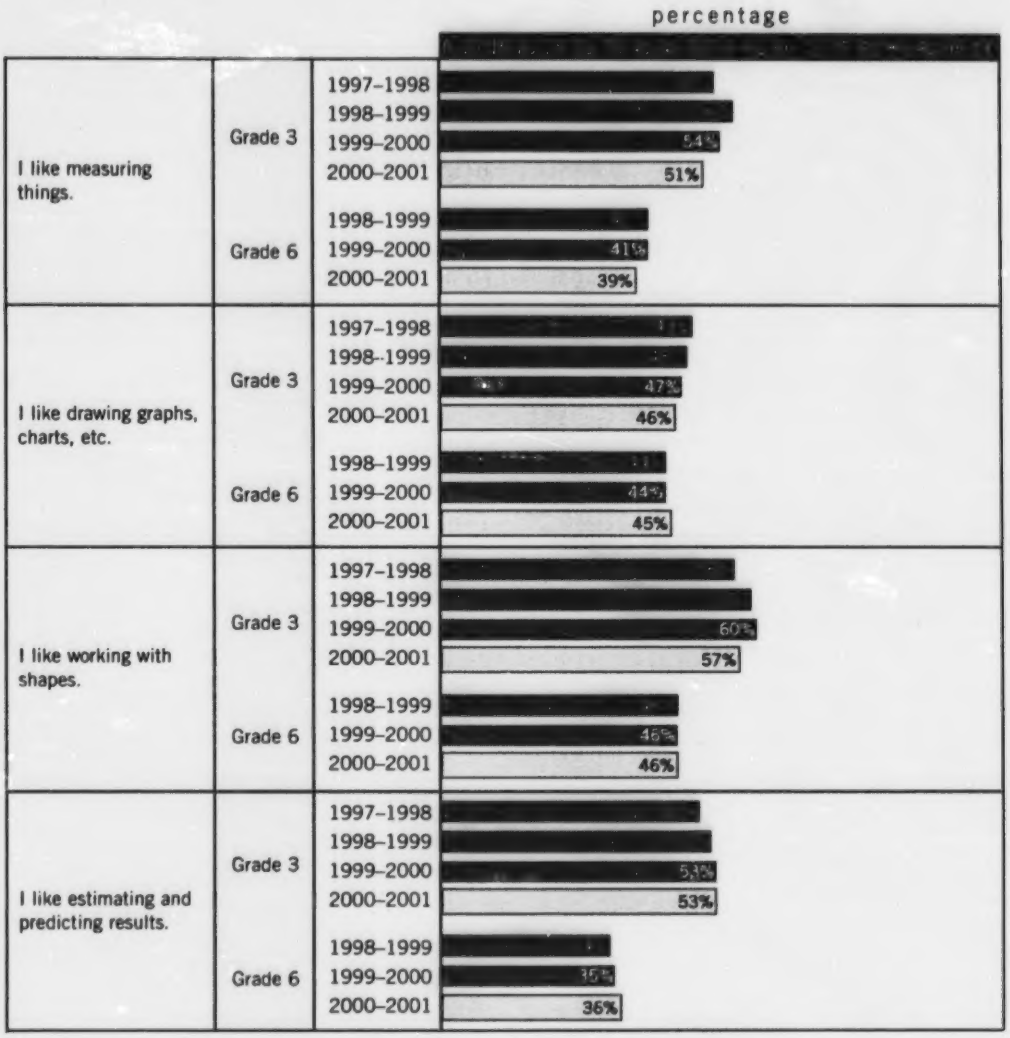
Relevant Findings from the Student Questionnaire

Student Attitudes Toward Mathematics



There are persistent gender differences in student attitudes towards mathematics in both grades. The proportion of boys who indicate that they are good at mathematics is 18 percentage points higher than girls in Grade 3 and 20 percentage points higher in Grade 6. The proportion of boys who indicate that they understand the mathematics they do in school is 13 percentage points higher than girls in Grade 3 and 14 percentage points higher in Grade 6. The proportion of boys who indicate that they like mathematics is 15 percentage points higher than girls in Grade 3 and 10 percentage points higher than girls in Grade 6. The percentage of boys who think mathematics is easy is 15 percentage points higher in Grade 3 and 16 percentage points higher in Grade 6. In both grades, boys' attitudes toward mathematics appear to be more positive than those of girls.

Student Mathematics Preferences



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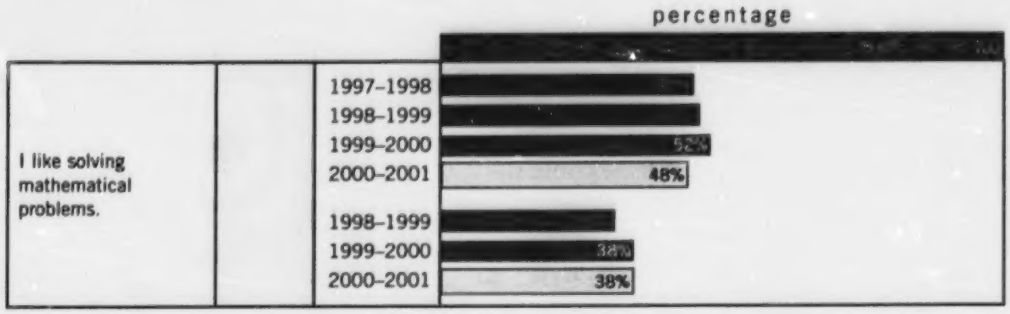
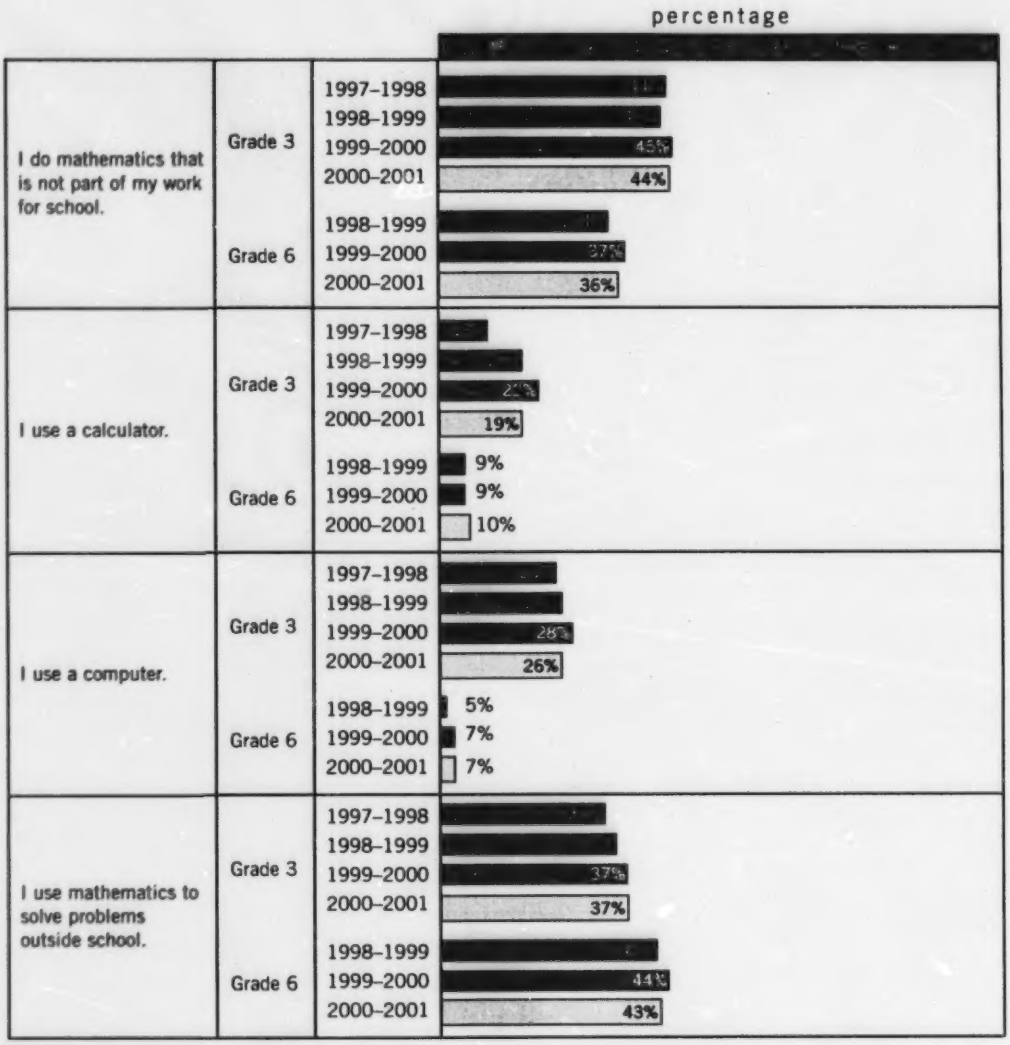
Student Mathematics Preferences (continued)



There are persistent gender differences and gender-related changes in preference in mathematics activities. In Grade 3, the proportion of boys who prefer measuring things is 2 percentage points higher than girls and by Grade 6 the proportion is 9 percentage points higher. In Grade 3 the proportion of girls who prefer drawing graphs and charts is 8 percentage points higher, but by Grade 6 this decreases to 7 percentage points. In Grade 3, the proportion of girls who prefer working with shapes is 5 percentage points higher, but this is reversed in Grade 6, where the proportion of boys is 1 percentage point higher than girls. In Grade 3, the proportion of boys who prefer estimating and predicting results is 4 percentage points higher and this increases to 12 percentage points in Grade 6. In Grade 3 the proportion of boys who prefer solving mathematical problems is 9 percentage points higher and this increases to 13 percentage points in Grade 6.

Application of Mathematics

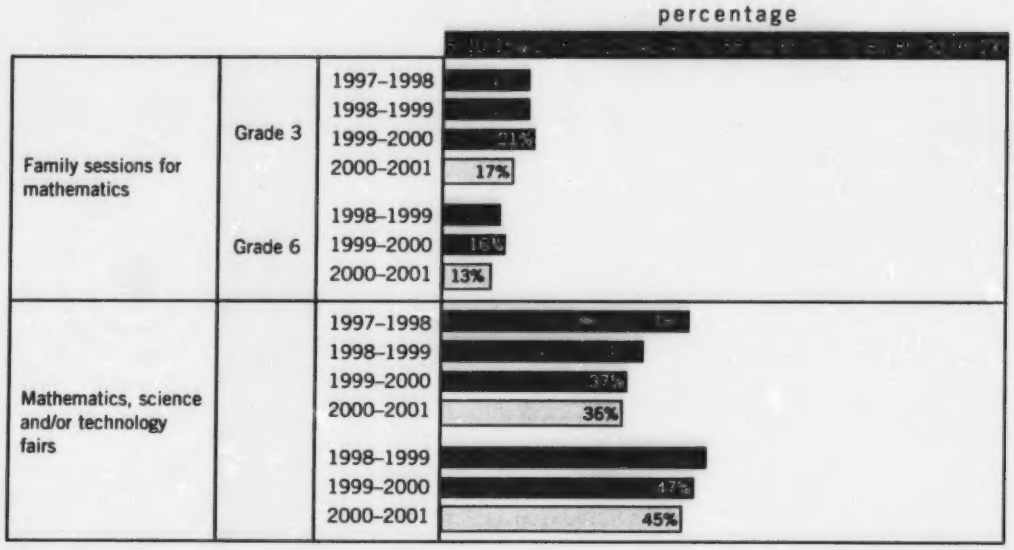


There is little difference in either Grade 3 or Grade 6 in the percentage of girls and boys who use a calculator or a computer, and in the percentage who do mathematics that is not part of their work for school. In Grade 3, the proportion of boys who indicate they use mathematics to solve problems outside school is 3 percentage points higher than girls and in Grade 6, 9 percentage points higher than girls.

Relevant Findings from the Principal Questionnaire

Schoolwide Mathematics Opportunities

Principals who indicate that their school has provided the following opportunities for students:



Observations and Suggestions Made by Trained Teacher Markers at the Marking Sites

At the end of the marking period, the trained teacher markers were asked to synthesize their observations about the student work they had been marking over the two-week period and to provide suggestions to teachers for enhancing and improving student learning. Markers for each subject provided both general and specific observations and suggestions. There is considerable similarity between the observations and suggestions made by Grade 3 and Grade 6 teacher markers this year and the observations and suggestions made by teacher markers last year.

MATHEMATICS

General Observations and Suggestions: Grade 3 and Grade 6

- **Students need more practice reading mathematics tasks (both performance-based and multiple-choice questions) and following instructions carefully.**
- **Students are not fully understanding and interpreting mathematics tasks. Teachers need to provide more opportunities for students to examine the intent of various types of questions by focusing on the different task requirements relating to key verbs/prompts (e.g., explain your thinking, show your work, describe all the mathematical concepts you see, explain how you know your answer is correct).**
- **Students need to understand that they must consistently show the steps they have followed in completing their work, as well as all the calculations they have made in responding to a task.**
- **Students need to use mathematics manipulatives on a regular basis. Teachers need to provide more opportunities for students to use manipulatives in solving authentic, everyday mathematics problems.**
- **Students need to check the reasonableness of their responses more carefully to ensure that their answers make sense mathematically.**

Specific Observations and Suggestions by Category and Strand: Grade 3

In the Problem Solving category, most students are successfully solving problems involving one operation, but teachers need to focus on having students

- solve multi-step problems or "break down" the problem into parts in order to arrive at a reasonable solution;
- identify the information necessary for solving the problem; and
- explain in detail the strategy they have used in solving a problem.

In the Understanding of Concepts category, students are showing some understanding of mathematical concepts, but teachers need to focus on having students

- use specific mathematical concepts across all five strands more regularly; and
- explain the appropriate use of mathematical concepts clearly so that their understanding is revealed.

In the Application of Mathematical Procedures category, students are showing some improvement in selecting and applying appropriate mathematical procedures and operations, but teachers need to focus on having students

- show the steps they have followed in completing their work, especially when mental computations and/or calculators are used in responding to a task;
- organize their responses so that careless errors are minimized during straightforward procedures and operations (e.g., in borrowing for subtraction); and
- check their computations regularly (e.g., by reverse operations) to ensure that their responses are reasonable.

In the Communication of Required Knowledge category, students have shown improvement in their ability to communicate their thinking, but teachers need to focus on having students

- use mathematical terms and symbols in explaining and/or justifying their responses;
- continue to use pictures, numbers and/or words in explaining their thinking; and
- use math journals regularly as means to develop improved communication skills in mathematics.

In the Number Sense and Numeration strand, most students are successfully selecting and performing computation techniques (addition, subtraction, multiplication, division) appropriate to one-step problems, but teachers need to focus on having students

- solve number problems involving more than one operation,
- represent and explain common fractions presented in real-life situations, and
- add and subtract money amounts and represent the answers in decimal notation.

In the Measurement strand, students are showing some improvement in selecting the most appropriate standard unit to measure linear dimensions and the perimeter and area of polygons, but teachers need to focus on having students

- estimate and measure the passage of time (in minutes, days, weeks, and years);
- explain the relationships between linear measures (e.g., millimetres are smaller than metres);
- compare and sequence objects by their linear dimensions; and
- make purchases and change for money amounts up to $10.

In the Geometry and Spatial Sense strand, most students are successfully identifying transformations (reflections, translations and rotations), but teachers need to focus on having students

- compare and sort two-dimensional shapes according to two or more attributes (e.g., number of sides, number of lines of symmetry); and
- compare and sort three-dimensional figures according to two or more geometric attributes (e.g., size, number of faces).

In the Patterning and Algebra strand, most students are successfully identifying and extending patterns, but teachers need to focus on having students:

- discuss the choice of a pattern rule, and
- describe patterns in informal mathematical language.

In the Data Management and Probability strand, students are showing some improvement conducting simple probability experiments and predicting the results, but teachers need to focus on having students

- select appropriate methods (e.g., charts, Venn diagrams) to cross-classify objects; and
- use mathematical language to explain their thinking with respect to probability experiments.

Specific Observations and Suggestions by Category and Strand: Grade 6

In the Problem Solving category, most students are successfully solving one-step problems, but teachers need to focus on having students

- solve multi-step problems and systematically organize and respond to all parts of the problem in order to arrive at a logical solution;
- recognize the information necessary to solving a problem and distinguish this from the irrelevant information;
- thoroughly explain the strategy they have used in solving a problem; and
- practise using estimation strategies (e.g., rounding off, clustering in groups) to solve problems and then check the reasonableness of their solutions.

In the Understanding of Concepts category, students are showing some understanding of mathematical concepts across the strands, but teachers need to focus on having students

- use specific mathematical concepts across all five strands more regularly, and
- clearly explain the appropriate use of mathematical concepts in responding to tasks.

In the Application of Mathematical Procedures category, most students are successfully selecting and applying appropriate mathematical procedures and operations, but teachers need to focus on having students

- show their work, especially when calculators and mental computations are used in responding to a task;
- explain the relationships between specific procedures and operations; and
- check their computations consistently, to ensure that they make sense mathematically.

In the Communication of Required Knowledge category, students have shown some improvement in their ability to communicate their thinking, but teachers need to focus on having students

- explain their thinking in a clear, concise manner using numbers, pictures and/or words;
- use mathematical terms and symbols in explaining their responses; and
- justify the reasonableness of their solutions.

In the Number Sense and Numeration strand, most students are successfully selecting and performing computation techniques appropriate to specific problems, but teachers need to focus on having students

- solve and explain multi-step number problems using the multiplication and division of decimals and percents;
- demonstrate an understanding of ratio;
- relate fractions to decimals, percents, rates and ratios; and
- represent the place value of whole numbers and decimals from 0.001 to 1 000 000.

In the Measurement strand, most students are successfully selecting among commonly used SI units of length, mass, capacity, area and volume in solving problems, but teachers need to focus on having students

- make simple conversions between metric units (e.g., metres to kilometres, grams to kilograms).

In the Geometry and Spatial Sense strand, most students are successfully identifying and/or sketching nets of three-dimensional figures and applying/analyzing transformations in a variety of geometric contexts, but teachers need to focus on having students

- classify two-dimensional shapes according to angle and side properties (e.g., obtuse, isosceles);
- demonstrate an understanding of similar and congruent figures by measuring angles and sides and matching corresponding parts; and
- use mathematical language to describe geometric ideas (e.g., acute-angled triangle, square-based pyramid).

In the Patterning and Algebra strand, most students are successfully identifying and extending patterns in terms of one or two variables, but teachers need to focus on having students

- describe patterns encountered in any context, and
- analyze number patterns and state the rule for any relationship.

In the Data Management and Probability strand, students are showing some improvement in their understanding of probability in making probability-related decisions, but teachers need to focus on having students

- systematically organize data into categories and ranges of their own selection;
- explain how the choice of intervals affects the appearance of data (e.g., in comparing two graphs); and
- make inferences and convincing arguments based on the analysis of tables, charts and graphs.

Specific Recommendations for Mathematics

Mathematics is essentially an integrated problem-solving activity. All five strands (i.e., major areas of knowledge and skills in the mathematics curriculum) require students to engage in problem solving. Within the four categories (i.e., areas that assess students' ability to understand, apply and communicate mathematical knowledge), problem solving is explicitly identified. Problem solving requires students to apply their understanding of concepts and mathematical procedures and to communicate what they are doing and why. In order to use mathematics effectively in real-life situations, students must integrate and apply knowledge and skills from all categories and strands of the mathematics curriculum.

The following recommendations are based on

- the 2000–2001 overall and category-specific student achievement results;
- patterns and trends emerging from the overall results year to year;
- the patterns in the collection of data from the various questionnaires emerging year to year; and
- the suggestions from the trained teacher markers at the EQAO marking centres.

Although there has been some overall improvement in mathematics in both Grade 3 and Grade 6, the category and strand data, as well as the comments and suggestions from teacher markers, underscore the continuing need for improvement in specific areas of the mathematics curriculum. Accordingly the following recommendations acknowledge the improvement in the overall mathematics results in Grade 3 and Grade 6. These recommendations for mathematics reiterate EQAO's specific recommendations from the 1999–2000 *Provincial Report.* It is critical that principals, teachers and parents examine these recommendations in light of schools' action plans to ensure that the recommendations are being addressed in a systematic and focused way.

EQAO recommends that

1. Teachers continue their efforts to focus mathematics instruction and assessment on
   - the overall and specific curriculum expectations identified for the grade they are teaching, and
   - the pattern of mathematics skills development throughout the grades as identified in the curriculum.

2. Teachers provide a mathematics program that appropriately addresses all aspects of the curriculum by focusing on
   - the acquisition of overall and specific knowledge and skills required for each strand — Number Sense and Numeration, Geometry and Spatial Sense, Measurement, Patterning and Algebra, and Data Management and Probability;
   - regular exposure to the required knowledge and skills from across the strands throughout the year;
   - the integration and transfer of knowledge and skills between and among strands; and
   - the application and transfer of the knowledge and skills for each strand across all categories — Problem Solving, Understanding of Concepts, Application of Mathematical Procedures and Communication of Required Knowledge.

3. Teachers provide multiple and regular opportunities within and across mathematics strands focusing on the category of Problem Solving, which requires students to analyze problems and select appropriate strategies that lead to accurate solutions. For example, have students
   - interpret the problem, looking for key pieces of information;
   - understand and apply a problem-solving process;
   - select and apply a variety of problem-solving strategies; and
   - complete multi-step problems.

4. Teachers provide multiple and regular opportunities within and across mathematics strands focusing on the Understanding of Concepts category, which requires students to understand and incorporate key mathematical concepts, ideas and relationships. For example, have students
   - demonstrate their understanding of specific concepts, such as perimeter and area, and explain their meaning; and
   - determine and explain relationships such as those between and among days, weeks, months and years.

5. Teachers provide multiple and regular opportunities within and across mathematics strands focusing on the Application of Mathematical Procedures category, which requires students to accurately complete mathematical procedures and operations. For example, have students
   - select and apply appropriate procedures, such as the construction and interpretation of graphs;
   - select and apply appropriate operations, such as division and subtraction;
   - select and apply appropriate tools and methods for computation, such as a calculator, a computer, paper and pencil, estimation and mental arithmetic; and
   - estimate the reasonableness and the accuracy of their answers.

6. Teachers provide multiple opportunities within and across mathematics strands focusing on the Communication category, which requires students to explain clearly and analyze their work using appropriate mathematical language and to assess the reasonableness of their answers. For example, have students
   - use correct mathematical terminology and symbols,
   - organize the expression of their thinking in a logical sequence, and
   - explain and justify their solutions both orally and in written form.

7. Teachers, working with principals, parents, school improvement planning committees and school councils,
   - provide opportunities for students to apply mathematical knowledge and skills in real-life situations, in which they perform calculations, solve problems and explain and justify their thinking; and
   - support students as they identify connections between mathematics and other subjects and apply their mathematical knowledge and skills to other curriculum areas, such as science, music and language.

8. Teachers emphasize the reading and mathematical skills required to understand and interpret problems, questions, prompts and instructions. For example,
   - identifying key words and phrases and completing the required actions,
   - understanding and following the sequencing of multi-step problems, and
   - using mathematics terminology and symbols.

French Immersion

Context

French Immersion programs are offered in school boards across Ontario. No specific provincial curriculum exists for French Immersion programs. Boards develop their own programs locally, using the provincial curriculum documents that guide teachers in English-language classrooms. French Immersion programs vary considerably from board to board, particularly in the amount of English-language instruction that students in these programs receive in different grades and subject areas, and in the grades at which students enter.

Any review of the achievement of French Immersion students on the Grade 3 assessment must take into account the variations that exist in French Immersion programs across the province. Depending on the school, students enter French Immersion in different grades, receive different amounts of instruction in English and French, and cover different subject areas in each language.

French Immersion Policy for the 2000–2001 Assessments

EQAO's French Immersion policy has been in place since 1998–1999.

For the Grade 3 assessment, boards choose among the following three options:

A) Students participate in the English-language assessment and complete the reading, writing and mathematics components in English.

B) Students participate in the English-language assessment and complete the reading and writing components in English and a French translation of the mathematics component.

C) Students complete only a French translation of the mathematics component.

Students in boards that choose Option C do not complete the reading and writing components and receive results only for mathematics. These students are excluded from the tables for reading and writing results. In all three options, students are allowed to use a bilingual glossary of mathematical terms, produced and provided by EQAO.

Recognizing that by the time students in French Immersion reach Grade 6 they should be able to work competently in English, the Grade 6 assessment does not offer options. All Grade 6 French Immersion students are required to participate in the regular English assessment. Students are allowed to use a bilingual glossary of mathematical terms, produced and provided by EQAO. Their results are contained in the Grade 6 tables that appear earlier in this section.

Overall Achievement Data in Grade 3 French Immersion, 2000–2001 (Method 1)

Option A: Reading, Writing and Mathematics — ENGLISH

	Exempt	No Data	IIS*	NE1**	Level 1	Level 2	Level 3	Level 4
Reading	2	< 1	5	< 1	7	26	53	7
Writing	2	< 1	4	0	2	30	53	9
Mathematics	2	< 1	3	0	3	25	55	12

Option B: Reading and Writing — ENGLISH; Mathematics — FRENCH

	Exempt	No Data	IIS*	NE1**	Level 1	Level 2	Level 3	Level 4
Reading	2	1	9	0	7	25	50	5
Writing	2	1	8	0	2	32	48	8
Mathematics	2	1	8	0	3	24	53	10

Option C: Mathematics — FRENCH

	Exempt	No Data	IIS*	NE1**	Level 1	Level 2	Level 3	Level 4
Mathematics	1	< 1	5	< 1	2	19	55	18

*Insufficient Information to Score
**NE1 = Not Enough Evidence for Level 1

General Recommendations

Introduction

A central part of EQAO's mandate is to make recommendations for improvement.

The subject-specific recommendations that appear earlier in this report provide focused, practical advice that teachers and parents of students in the elementary school system can act on right away. For ease of reference, these recommendations are reprinted below. In addition, this report contains general recommendations that address broader issues and that call for short-, medium- and long-term action on the part of many partners in the education community. In developing this year's general recommendations, EQAO has built on data from the 2000–2001 Grade 3 and Grade 6 assessments and on the recommendations it made in previous editions of the *Provincial Report.*

EQAO's general recommendations also reflect the feedback contained in the action plans that school boards have submitted for the past three years. EQAO presented its findings and recommendations from its first review of school board action plans in the *1998–1999 Provincial Report on Achievement* and, in conjunction with the release of the 1999–2000 *Provincial Report,* published *The Ontario Report and Guide on School Improvement Planning, 1999–2000.*

This fall, EQAO will publish a separate report on its review of the action plans that school boards submitted in the spring of 2000. This report (*The Ontario Report and Guide on School Improvement Planning*) will be sent to all schools and school boards and will also be available on EQAO's Web site (www.eqao.com).

This annual review of school board action plans has become an increasingly important focus for EQAO. As additional assessment data become available each year, the need for school boards to demonstrate an

effective follow-up strategies becomes more acute. When school boards update their action plans, they must analyze the provincial achievement data, their local EQUIP data and the recommendations in this report in the context of their own local results. Every school board action plan is unique because it reflects the particular needs, priorities, challenges and strengths of a community.

General Recommendations

In the *1999–2000 Provincial Report on Achievement*, EQAO made general recommendations to students, parents, teachers, principals, school councils, school boards, faculties of education, the Ontario College of Teachers and the Ministry of Education. Since there has been little discernable improvement in the achievement data, except in mathematics, and little change in the questionnaire data, these recommendations stand and EQAO urges all education stakeholders to revisit them and ensure that they are being addressed.

The Ontario Curriculum, Grades 1–8, now in its fifth year of implementation, sets the language and mathematics expectations on which the Grade 3 and Grade 6 assessments are based. The province-wide assessment data and other contextual data that EQAO has released over the past four years show that large percentages of students in English- and French-language schools continue to achieve below the provincial standard. In addition, these data show substantial room for improvement in the overall reading and writing results at the Grade 3 and Grade 6 levels as well as persistent discrepancies between girls' and boys' achievement in and attitudes toward reading, writing and mathematics in both Grade 3 and Grade 6.

Accordingly, EQAO makes the following recommendations:

1. That the **Ministry of Education** use the provincial Grade 3 and Grade 6 assessment data accumulated over the past four years to review the effectiveness of the province-wide implementation of the curriculum, the range of instructional strategies teachers are using to deliver the curriculum, the training teachers are receiving to implement the curriculum and the resources that are available to support curriculum delivery at the classroom level.

2. That the **Ministry of Education, the Ontario College of Teachers, the teachers' federations and all faculties of education** take steps to ensure that they are providing teachers with ample opportunities, programs, resources and encouragement to develop and expand their knowledge and skills in assessment.

3. That **school boards** carefully review their action plans in relation to the board data they have accumulated over the past four years from the province-wide Grade 3 and Grade 6 assessments and, where necessary, take additional measures to address those areas of student achievement in the language and mathematics curriculum that are not showing strong and consistent improvement over time.

4. That **school boards and schools**, in partnership with parents and school councils, incorporate the data collected and released as part of the Education Quality Indicators Program (EQUIP) into their school and board reports, action plans and local profiles in order to give parents and the public greater insight into the wide range of factors that contribute to achievement and to the functioning of the education system.

5. That **principals and teachers**, with support from their school boards and in consultation with parents and school councils, analyze and, where appropriate, act on the subject-specific recommendations in this report as well as the comments from teacher markers about student achievement in reading, writing and mathematics.

6. That the **Ministry of Education, the English-language school boards and the French-language school boards** conduct and support research on best practices in teaching and assessing reading, writing and mathematics in the context of *The Ontario Curriculum, Grades 1–8* and review and disseminate findings from local, national and international studies to principals, teachers, parents and other communities.

Subject-Specific Recommendations

Reading

EQAO recommends that

1. Teachers focus their reading instruction and assessment on the overall and specific expectations for the grade they are teaching, while at the same time recognizing the continuum of skills development throughout the curriculum.

2. Teachers provide students with multiple and regular opportunities to do activities associated with the Reasoning category, which requires students to select, describe, interpret and analyze relevant ideas from both fiction and non-fiction. For example, as they read, have students

    - select supporting information,
    - describe a character's actions,
    - find the main idea, and
    - explain why the writer took his or her position.

3. Teachers provide students with multiple and regular opportunities to do activities associated with the Communication category, which requires students to use ideas and information in different contexts by connecting them to personal knowledge and experiences and other readings. For example, have students

    - give their opinion about what they have read, and
    - support their opinions with ideas from the reading and from their own experience/thinking.

4. Teachers provide students with multiple and regular opportunities to do activities associated with the Organization of Ideas category, which requires students to identify and describe different ways that different forms of texts are organized and to use this knowledge to aid understanding. For example, as they read, have students

    - examine the way in which a particular story or article is organized, and
    - tell how the organization helps them predict what to expect next.

5. Teachers provide students with multiple and regular opportunities to do activities associated with the Application of Language Conventions category, which requires students to identify and explain the use of language conventions up to and including those that are relevant for their grade levels. For example, have students

    - identify the name of a grade-appropriate punctuation mark, and
    - explain how it helps the reader understand the text.

6. Teachers ensure their reading programs offer

    - a balance between fiction and non-fiction materials,
    - types of reading materials that reflect the changing reading patterns of students from early to later grades (e.g., a much stronger preference for magazines is indicated by Grade 6 students than by Grade 3 students), and
    - a variety of content in the materials to appeal to the reading interests of as many students as possible, particularly boys, who seem to require close connection with the content to sustain their interest in what they are reading.

7. Teachers, working with principals, parents, school improvement planning committees and school councils, provide more opportunities for students to engage in dialogue about their reading, particularly in explaining, summarizing and reflecting on the information and ideas and relating the information and ideas to their personal experiences and opinions.

8. Teachers focus on the reading skills required to understand and interpret questions, prompts and instructions, for example,

    - understanding the demands indicated by key words and phrases, and
    - understanding and following the sequencing of multi-step tasks.

9. Teachers, working with principals, recognize the cross-curricular nature of their reading program by embedding instruction in reading skills and reading-related activities in all subjects.

Writing

EQAO recommends that

1. Teachers focus their writing instruction and assessment more specifically on the overall and specific expectations for the grade they are teaching, while at the same time ensuring that they are implementing the writing skills development continuum described in The Ontario Curriculum, Grades 1–8 and teaching the stages of the writing process.
2. Teachers provide students with multiple and regular opportunities to express their ideas clearly (Reasoning), developing skill in focusing on the purpose of the writing task, in maintaining focus on the purpose, and in developing ideas and relating them to the purpose and the ideas to each other. For example, have students
    - show that they understand the topic and
    - stay on topic throughout the writing.
3. Teachers provide students with multiple and regular opportunities to communicate clearly (Communication), developing skill in using writing techniques and style appropriate to the purpose and the intended audience. For example, have students use
    - appropriate and varied sentences;
    - appropriate imagery;
    - appropriate and correct vocabulary; and
    - an appropriate voice.
4. Teachers provide students with multiple and regular opportunities to organize their writing clearly (Organization of Ideas), developing skill in using appropriate organizers (both visual and written) for different kinds of writing. For example, have students
    - use appropriate words to connect ideas;
    - organize sentences into a paragraph and, in junior grades, link paragraphs in longer stories and information pieces; and
    - use appropriate visual effects such as underlining, colour, pictures and graphs.
5. Teachers ensure students are able to use the writing conventions for their grade levels correctly (Application of Language Conventions). For example, have students correctly use
    - the exclamation mark and subject–verb agreement in Grade 3 and
    - the colon and subordinate clauses in Grade 6.
6. Teachers provide students with more frequent opportunities to write for a wide variety of purposes and audiences appropriate to their interests and stages of development and to their writing needs.

7. Teachers focus on the stages of the writing process, particularly on the pre-writing and planning stages, which provide students with opportunities to talk about and organize their ideas before writing their initial drafts.
8. Teachers teach students how to revise and edit their writing, with particular emphasis on doing this independently.
9. Teachers have students display, read aloud, discuss and find various other ways of "publishing" their writing to help them become more confident writers.
10. Teachers, working with principals, parents, school improvement planning committees and school councils, provide more opportunities for students to do more writing beyond school-assigned writing, and to "celebrate" and "publish" their writing.
11. That teachers, working with principals, recognize the cross-curricular nature of their writing programs by embedding instruction in writing and writing-process skills in writing activities in all subjects.

Mathematics

EQAO recommends that

1. Teachers continue their efforts to focus mathematics instruction and assessment on
    - the overall and specific curriculum expectations identified for the grade they are teaching, and
    - the pattern of mathematics skills development throughout the grades as identified in the curriculum.
2. Teachers provide a mathematics program that appropriately addresses all aspects of the curriculum by focusing on
    - the acquisition of overall and specific knowledge and skills required for each strand — Number Sense and Numeration, Geometry and Spatial Sense, Measurement, Patterning and Algebra, and Data Management and Probability;
    - regular exposure to the required knowledge and skills from across the strands throughout the year;
    - the integration and transfer of knowledge and skills between and among strands; and
    - the application and transfer of the knowledge and skills for each strand across all categories — Problem Solving, Understanding of Concepts, Application of Mathematical Procedures and Communication of Required Knowledge.

3. Teachers provide multiple and regular opportunities within and across mathematics strands focusing on the category of Problem Solving, which requires students to analyze problems and select appropriate strategies that lead to accurate solutions. For example, have students
    - interpret the problem, looking for key pieces of information;
    - understand and apply a problem-solving process;
    - select and apply a variety of problem-solving strategies; and
    - complete multi-step problems.
4. Teachers provide multiple and regular opportunities within and across mathematics strands focusing on the Understanding of Concepts
category, which requires students to understand and incorporate key mathematical concepts, ideas and relationships. For example, have students
    - demonstrate their understanding of specific concepts, such as perimeter and area, and explain their meaning; and
    - determine and explain relationships such as those between and among days, weeks, months and years.
5. Teachers provide multiple and regular opportunities within and across mathematics strands focusing on the Application of Mathematical Procedures category, which requires students to accurately complete mathematical procedures and operations. For example, have students
    - select and apply appropriate procedures, such as the construction and interpretation of graphs;
    - select and apply appropriate operations, such as division and subtraction;
    - select and apply appropriate tools and methods for computation, such as a calculator, a computer, paper and pencil, estimation and mental arithmetic; and
    - estimate the reasonableness and the accuracy of their answers.

6. Teachers provide multiple opportunities within and across mathematics strands focusing on the Communication category, which requires students to explain clearly and analyze their work using appropriate mathematical language and to assess the reasonableness of their answers. For example, have students
    - use correct mathematical terminology and symbols,
    - organize the expression of their thinking in a logical sequence, and
    - explain and justify their solutions both orally and in written form.
7. Teachers, working with principals, parents, school improvement planning committees and school councils,
    - provide opportunities for students to apply mathematical knowledge and skills in real-life situations, in which they perform calculations, solve problems and explain and justify their thinking; and
    - support students as they identify connections between mathematics and other subjects and apply their mathematical knowledge and skills to other curriculum areas, such as science, music and language.
8. Teachers emphasize the reading and mathematical skills required to understand and interpret problems, questions, prompts and instructions. For example,
    - identifying key words and phrases and completing the required actions,
    - understanding and following the sequencing of multi-step problems, and
    - using mathematics terminology and symbols.